

THIRTY-FIFTH ANNUAL REPORT

OF THE

BOARD OF HEALTH

OF THE

STATE OF NEW JERSEY

1911

AND

Report of the Bureau of Vital Statistics



TRENTON, N. J.

STATE GAZETTE PUBLISHING CO., PRINTERS.

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Letter of Transmittal.

TRENTON, N. J., October 31st, 1911.

To His Excellency Woodrow Wilson, Governor of New Jersey:

SIR—I have the honor to transmit herewith the Thirty-fifth Annual Report of the Board of Health of the State of New Jersey, and the Report of the Bureau of Vital Statistics.

Very respectfully,

BRUCE S KEATOR,

Secretary.

(iii)

Board of Health of the State of New Jersey.

MEMBERS.

JOHN H. CAPSTICK, President.....Montville.
GEORGE P. OLCOTT, C.E., Vice President.....East Orange.
BRUCE S. KEATOR, M.D., Secretary.....Asbury Park.
WILLIAM H. CHEW.....Salem.
HERBERT W. JOHNSON.....Haddonfield.
RICHARD C. NEWTON, M.D.....Montclair.

The offices of the Board are in the State House, Trenton.

ORGANIZATION OF THE STATE DEPARTMENT OF HEALTH.

With the organization of the State Board of Health in 1908, five working divisions were established, viz., Division of Vital Statistics, Division of Medical and Sanitary Inspection, Division of Food and Drugs, Division of Creameries and Dairies and Division of Sewerage and Water Supplies.

The complete personnel of the department is as follows:

Bruce S. Keator, M.D., Secretary and Executive Officer.
A. Clark Hunt, M.D., Assistant Secretary.
Charles J. Merrell, Chief Clerk.

DIVISION OF VITAL STATISTICS.

David S. South, State Registrar and Chief.
Walter R. Scott, Assistant to the Chief.
Albert J. Shull, Clerk.
Mrs E. C. Closson, Clerk.
Miss K. M. Vare, Clerk and Tabulator.
Miss E. S. Merrell, Clerk and Stenographer.

DIVISION OF MEDICAL AND SANITARY INSPECTION.

A. Clark Hunt, M.D., Chief.
David C. Bowen, Sanitary Inspector.
William H. Marcussen, Sanitary Inspector.
Millard Knowlton, M.D., Tuberculosis Inspector.
Norval P. Closson, Clerk and Stenographer.
S. Elizabeth Wilkes, Clerk and Stenographer.
Edmund R. Outcalt, Clerk and Stenographer.

vi ORGANIZATION OF THE DEPARTMENT.

DIVISION OF FOOD AND DRUGS.

R. B. Fitz-Randolph, Chief of Division and Director of the State Laboratory of Hygiene.

- William G. Tice, Assistant to the Chief.
- John V. Mulcahy, Bacteriologist.
- Henry W. Denny, Chemist.
- Christopher L. Devitt, Chemist.
- William S. Townsend, Inspector.
- Louis Tremallo, Inspector.
- Isaac H. Shaw, Slaughter-house Inspector.
- Walter W. Scofield, Jr., Assistant.
- Frank Yates, Clerk and Stenographer.
- Anita A. Stephan, Clerk and Stenographer.
- Joseph A. Moran, Laboratory Assistant.
- Antoinette Foy, Laboratory Assistant.

DIVISION OF CREAMERIES AND DAIRIES.

- George W. McGuire, Chief.
- A. I. Goehrig, Assistant to the Chief.
- S. S. Vandruff, Inspector.
- Frederick C. Robertson, M.D., Inspector.
- William J. Willsey, Inspector.
- Miss Florence E. Derbyshire, Clerk.

DIVISION OF SEWERAGE AND WATER SUPPLIES.

- Francis E. Daniels, Chief.
- George T. Palmer, Assistant.
- Chester G. Wigley, Assistant Sanitary Engineer.
- Howard B. Warren, Chemist.
- Harry P. Letton, Field Assistant.
- Calvin N. Harrub, Field Assistant.
- Clarence W. Sparmaker, Inspector.
- Fred. B. Worman, Inspector.
- Charles B. Robinson, Inspector.
- Louise MacMillan, Clerk and Stenographer.
- Charles A. Macdonald, Jr., Clerk and Stenographer.

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Report of the Secretary.

BRUCE S. KEATOR, M.D.

To the Board of Health of the State of New Jersey:

GENTLEMEN—Herewith is presented the report of the Board for the year ending October 31st, 1911. The wisdom of the Board in subdividing the work and placing competent men as heads of the divisions has resulted in increased efficiency, and no year in the history of the Board since its organization has seen more faithful application to the service or been marked by greater advances in the administration of health laws.

As the Secretary of the Board is the Superintendent of the Bureau of Vital Statistics, the report of statistical work for the year ending December 31st, 1910, is herewith submitted. In the arrangement of this report a departure has been made from that of former reports in placing the records of vital statistics after the reports of the various departments, as we believe this arrangement is more logical.

A summary of the work performed by each division is presented, together with a record of the action of the Board in relation to the care of contagious diseases of animals, examination of health officers, licensing of slaughter houses, control of the oyster industry, and the enforcement of the many and various laws, the execution of which is placed in the hands of the Board.

Following the plan of former years a summary of the laws passed during the legislative session of 1911 is presented. Our purpose is to place before the readers of the report a concise statement of the provisions of new laws and any supplemental changes in already existing laws. The new laws and amendments to old laws are printed by the State Health Department and furnished to local boards of health throughout the State. As the annual report of the Board is widely distributed it is thought that it will be of interest to others to follow the efforts of this Board to

secure such legislation as will tend to better protect the lives and health of the citizens of the State.

The desire of the Board has been to be more thorough in its methods and to accomplish results. An examination of the record for the year, as detailed in this report, will, I believe, give some proof of the realization of the desire.

DIVISION OF MEDICAL AND SANITARY INSPECTION.

A review of the work performed by this division shows that increased attention has been given to perfecting the organization of local boards of health and directing them in the performance of their official duties. During the year ending October 31st, 1911, representatives of the division have attended twenty-eight meetings of local boards of health in session, and 181 conferences or meetings with local board of health officials. These meetings or conferences were attended either upon special request by the local board of health or arranged for by appointments made by the State Board of Health. At these meetings all subjects relating to local sanitary administration were discussed and valuable information given to the members of the local boards. This work is a continuance of that of the previous year and beneficial results are already noticeable and highly encouraging.

In 1909 reports of contagious diseases were being received from 191 sanitary districts. In 1910, 327 districts; in 1911, from 378 districts, making an increase of 58.4 per cent. in the number of districts reporting in 1911 over those reporting in 1909. There are in the State of New Jersey 476 sanitary districts, of which, in the year 1911, 378 were reporting communicable diseases, leaving 98 districts from which no reports were received. Investigation shows that in 56 of these districts no cases of contagious disease had occurred, so that at the present time reports are received from 91.2 per cent. of the sanitary districts in the State in which notifiable diseases occurred. The law which was passed during the legislative session of 1911, fixing the responsibility for reporting cases of communicable diseases to the State Board of Health by local boards of health, and authorizing the payment of ten cents for each case so reported, will undoubtedly result in a short time in the receiving of complete reports of communicable diseases from

every sanitary district in the State. During the year 1909 a total of 10,560 cases of notifiable diseases were reported to the State Board of Health. In 1910 a total of 14,322 cases were reported, while in 1911 a total of 14,913 cases were reported. During these years there were no unusual epidemics, and the increase of 4,353 cases is encouraging.

Last year the sanitary inspection of the public school buildings of the State was undertaken. While the working force of the division is such that it was only possible to cover a few of the buildings the inspections which have already been made indicate the necessity for continuing this line of inquiry. The full report of each inspection, together with a statement of the defects noted and recommendations for the improvement of unsanitary conditions is forwarded to the State Commissioner of Education, who in turn notifies the local boards of education of the results of the inspections and makes the request that immediate steps be taken to carry out the recommendations contained in the report. This plan has been followed in each instance, and the improvement in the sanitary conditions at the schools which have been inspected indicates that the schools of the State should be periodically inspected by a trained inspector, in order that an exact and scientific report of the actual sanitary conditions of the public school buildings of our State may be a matter of record. There are 2,034 public school buildings in New Jersey, and to properly inspect this number of buildings at sufficiently frequent intervals at least two inspectors should be continuously employed.

In 1911 an appropriation of ten thousand dollars was allowed to the State Board of Health to carry on an anti-tuberculosis campaign. The supervision of this work is in charge of the Division of Medical and Sanitary Inspection. A special tuberculosis inspector has passed the civil service examination and is preparing to carry on an active campaign. Plans are being formed to secure a complete and interesting exhibit and to prosecute the educational campaign against tuberculosis vigorously.

The investigation of cases of contagious diseases occurring on dairy premises has been continued during the year, and the report of the division shows that these diseases have occurred upon 80 premises, and that 32 cases of diphtheria, 30 of scarlet fever, 19 of typhoid fever and 7 of tuberculosis have been investigated. The methods which are adopted in the handling of these cases is

given in detail in the report of the division, and it is apparent that every effort is made to protect the consumer of milk from the danger of infection occurring upon dairy premises and also to safeguard the interests of the dairyman. The act by which physicians in attendance upon cases of contagious diseases occurring upon dairy premises are required to report directly to the State Board of Health, was so amended that now not only is the physician required to report these cases, but also to make report of any cases of contagious diseases occurring in the person or families of persons employed upon dairy premises whether resident upon the premises or not. This amendment to the act will tend to increase the protection against the contraction of contagious diseases through milk.

Under the provisions of chapter 292, laws of 1908, the State Board of Health is required to initiate and prosecute measures to prevent epidemics of contagious diseases occurring in State institutions. This work has been under the supervision of the Division of Medical and Sanitary Inspection, and since the amendment of the law it is shown that a careful study of each epidemic has been made. The records for the year show that 37 cases have been reported to the division by superintendents of institutions. This number includes 3 cases of diphtheria, 20 of typhoid fever, 12 of tuberculosis and 2 of measles. Each epidemic is carefully studied and every effort is made to ascertain the source of the disease and methods by which it is being transmitted from one person to another. In these inquiries the division has met with the hearty co-operation of the superintendents and managers of institutions, and any suggestions which have been made were immediately complied with.

As local boards of health are frequently in doubt as to the proper action which is to be taken, this question is fully presented in the report of the division, and the information given will doubtless prevent the bringing of illegal actions by local health authorities, and lead to a better understanding of their relation to nuisances affecting the health of citizens.

The epidemiological work of the division as presented in the report is of special interest. The investigation of epidemics is most interesting and useful, often resulting in the discovery of the cause of the epidemic and with the case known in limiting the extension of contagious disease. The reports of several epidemics occurring in the State during the year are worthy of consideration.

DIVISION OF SEWERAGE AND WATER SUPPLIES.

The work of this division during the year has been continued along the same lines as in the past, efforts being made to enforce the laws regarding the prevention of pollution of the waters of the State.

Inspectors are constantly patrolling the watersheds and streams for the purpose of abatement of pollutions. Prevention of pollution is also accomplished by means of sewage treatment and disposal plants. This work is increasing rapidly throughout the State, there being an increase from 39 plants in October, 1908, to 105 plants in operation and 6 under construction at the present writing, practically all of the standard methods of sewage treatment in use in the State.

The methods of enforcing the laws leading to the installation of sewage disposal plants have been explained in former reports, a list of municipalities now "under orders" being given in the report of the Division of Sewerage and Water Supplies. There is also a list of municipalities having plans of sewage disposal plants approved without having been placed under orders.

In the detailed report of the sewage disposal plants will be found descriptions of such plants as have not been described in previous reports, and a short statement of the present condition of each one inspected. Methods employed for improving the efficiency of sewage disposal plants are also outlined in the report of this division.

A private company has offered to install a unit to purify, by the ozone process, 1,000,000 gallons per day of the sewage of Trenton. What the results of this trial will be remains to be seen.

Considerable work has been done during the year in regard to water supplies throughout the State.

Of the 366 towns now having public water supplies, 142 receive a treated water, either filtered or disinfected. A detailed account of these is given in the report of the Division of Sewerage and Water Supplies.

The same policy of having a representative of the division instruct the attendant how to get the most efficient service from his plant, has been pursued as has been carried out in the case of sewage disposal plants.

As some of the filtration plants have been furnished with by-passes, by means of which raw water is admitted to the distributing mains, authority has been given the division to have them sealed as they are a source of serious danger. These seals may be broken only with the consent of the State Board of Health, under penalty of action in the Court of Chancery.

It is necessary to keep careful watch of untreated surface supplies, as danger of contamination becomes more and more imminent as the population upon the watersheds increases. There are several supplies in the State which should be purified before being delivered to consumers.

Several new water supplies have been established during the year, a list of which is given in the report of this division.

Stream inspections have been continued throughout the year, extra inspectors being employed during the summer to make a complete inspection of the ocean front and tributaries. During the year 1,667 cases of pollution were reported, 485 of which were abated upon reinspection.

One of the most important features of the work of the division is the work done in the laboratory. During the year there have been analyzed 1,934 samples of water and sewage. On account of lack of space, only routine work can be done. The laboratory is well equipped with apparatus, but more room with an experiment station for investigating the purification of water, sewage and trades waste is urgently needed.

DIVISION OF CREAMERIES AND DAIRIES.

The work of this division has steadily increased since 1908. This is largely due to the growing demand for dairy inspections from local health authorities and to the action of the legislature in passing a law requiring the investigation of the methods used in the manufacture of ice cream and the licensing of all such factories by the State Board of Health.

During the past year the work of the division has increased over 50 per cent., there having been made 3,064 inspections of all places where milk and cream is handled, as against 1,989 inspections during the previous year. These include dairies, creameries, milk depots and ice cream factories. One thousand eight hundred

and seventy-four inspections of dairies alone were made by the inspectors, this being an increase of 396 over the dairy inspections of the previous year.

Considering the fact that no increased appropriation was granted by the Legislature for the work of this department, the amount of labor accomplished has been remarkable and has taxed the time and ability of the staff to the utmost. An increased amount of work in the field entails additional work in the office of the division, and it has been necessary for one of the inspectors to devote a considerable portion of his time to routine office work when he might have been employed in making inspections. The annual appropriation for the work of the Division of Creameries and Dairies for the past few years has been \$8,450. Out of this sum must be paid the salaries and traveling expenses of a chief and three inspectors, the salary of a clerk, and incidental expenses, including blanks, postage and stationery.

The office records of the division show that there has been a general improvement in the condition of the milk supply in the State. Each dairy inspected is given a numerical rating for every item on the score-card, each one of which has a bearing on the methods used in handling milk. By this system the division can readily refer to the conditions in any given locality any year since the system was started in 1908.

It is estimated that there are ten thousand dairies in the State, besides the 174 creameries and 415 ice cream factories reported. The creameries have been inspected and reinspected many times during the year, and it is now believed that they have reached a very fair state of sanitation. The methods employed in handling milk and its products in these establishments have undergone radical changes for the better since the enactment of the creamery law in 1906. The Legislature at its last session amended the above act so as to include the licensing of all places where ice cream is manufactured. It was originally the practice of the department to classify only large wholesale ice cream establishments as creameries, but a recent amendment to the bakery act extended this classification to establishments in which ice cream is manufactured, including cellars, when the sanitary conditions were approved by the State Board of Health. These latter, under the act, must now be licensed to legally conduct the business of manufacturing ice cream. Although the law went into effect just at

the beginning of the busy season, many of the operators immediately made considerable improvements in their establishments in order to comply with the requirements of this Board, and others are planning extensive alterations during the winter months, so that their places may be in a condition to be licensed at the beginning of the next season. The methods of these manufacturers have been carefully watched and improvement over former methods has been insisted upon. In order to give proper credit to those manufacturers who were careful in their habits, and whose places were kept in a sanitary condition, a score-card was prepared on which to record the conditions found. This card has been used during the summer, and shows in detail the sanitary conditions of every place inspected. These cards are filed in the office of the division. A code of rules was also prepared and has been adopted by the Board, and it is the intention of the Board to have them printed and posted in every ice cream establishment in the State. There is still a great deal of preliminary work to be done in ice cream inspection, since it has been impossible to visit the factories located in the southern portion of the State and in the widely scattered country sections.

The greatest task confronting this division is the inspection of dairy farms. To do this work completely and thoroughly, it would be necessary to have an inspector stationed in every county of the State. The expense would be quite heavy, and would be increased by the necessity of hiring conveyances for country inspection. With the present meagre force of the division, however, it is utterly impossible even to inspect all the farms once a year. The division has therefore adhered to the plan adopted in 1908, of co-operation with local boards of health who manifest a certain amount of interest in their milk supply. It is believed that this method is the most economical, and produces the best and most lasting results. The number of local boards of health who have requested inspections of their dairy premises has now reached nearly forty, and they are highly pleased with the benefits derived from the present system. Many of these local boards furnish some sort of conveyance at their own expense and detail a local inspector to accompany the representative of this division to the local dairies, and otherwise assist the division in controlling their respective milk supplies. In some cases over 200 dairy inspections have been made for a single local board. These dairies are

often located on widely scattered farms. The requests for inspection and reinspections of these farms, no matter how frequently they have been made, have been promptly met in all cases. The greatest need of the division at the present time is a larger appropriation in order to meet the additional demands which are being made on the department for dairy inspection.

PROHIBITION OF THE USE OF COMMON DRINKING CUPS.

The well established fact that disease may be transmitted from one individual to another by the use of the common drinking cup has resulted in legislation in several states, regulating or prohibiting the use of common drinking cups in public places. The laws of the various States differ somewhat in the methods by which the prohibition is accomplished, and as to the places in which such use of cups is prohibited.

The movement for restricting the use of the common drinking cup in this State had its origin among those interested in the prevention of tuberculosis, the view being taken that the removal of this avenue by which the disease might be transmitted would tend to limit its spread.

The following law was therefore introduced, and having been passed by the Legislature, was approved by the Governor of the State on April 13th, 1911:

ACT REGULATING THE USE OF THE COMMON DRINKING CUP.

CHAPTER 171, LAWS OF 1911.

AN ACT to restrict the use of common drinking cups and to prevent the communicating of infectious diseases.

BE IT ENACTED by the Senate and General Assembly of the State of New Jersey:

1. The use of the common drinking cup, an undoubted source of communication of infectious diseases, is hereby prohibited in all public places within this Commonwealth, and the State Board of Health shall have full authority to establish such reasonable rules and regulations to make this prohibition effective as in their judgment seems wise and proper.
 2. Whoever fails to observe the provisions of this act, or the rules and regulations of the State Board of Health made in relation thereto, shall be deemed guilty of a misdemeanor and be liable to a fine not exceeding twenty-five dollars for each offense.
 3. All acts and parts of acts inconsistent herewith are hereby repealed.
- Approved April 15th, 1911.

In compliance with the provisions of this act the State Board of Health adopted the following rules and regulations at a regular meeting of the Board held June 27th 1911:

WHEREAS, an act was recently passed by the Legislature (chapter 171, laws of 1911) restricting the use of the common drinking cups and to prevent the communicating of infectious disease thereby, and

WHEREAS, by the provisions of said act the use of the common drinking cup is prohibited in all public places within the commonwealth of New Jersey, and

WHEREAS, the State Board of Health is given full authority to establish reasonable rules and regulations to make this prohibition effective as in their judgment seems wise and proper, therefore, be it

Resolved by the Board of Health of the State of New Jersey, that the following rules and regulations are hereby adopted:

That on and after July 4th, 1911, it shall be unlawful to provide or maintain a common drinking cup—

- a. In any public park, street or highway.
- b. In any hotel, public school, public hall, theater, moving picture show, or public library.
- c. In all municipal, penal, philanthropic and other institutions in this State.
- d. In any railroad or trolley station, railroad car, boat, or in any vehicle used for the carrying of passengers for a consideration.
- e. A public place within the meaning of this act will be construed to include any and all places, whether maintained by private or public authority, to which the public have the right of access at any time, with or without compensation.

It will be noticed that the definition of a public place is a very broad one, and that there are few places that are not included in the definition.

The chief exception is in factories and workshops and in public stores where, although the public shall be furnished with separate cups, employes may use the common cup.

The law does not apply to clubs where the public is admitted only on invitation. The law became operative on the 4th of July. On that date and for several days following there was a period of extreme heat, and as the public were not fully aware of the existence of the law forbidding the use of the common drinking cup, inconvenience and actual discomfort resulted, as oftentimes the travelling public were compelled to go without drinking water for many hours. Within a short time, however, it was noticed that persons were carrying individual drinking cups, and the severe criticisms of the law, which had appeared in the public press, disappeared. After becoming adjusted to the law a change came over the thinking public, and those who at first condemned it as inhumane and unjust, are now its champions. The cause for the

adverse criticisms was due almost entirely to the failure of the transportation companies to furnish individual cups on trains, or any new means by which a drinking cup could be obtained.

The law would appear to be defective in this particular, and Massachusetts, after a year or so of trial of a law similar to the one passed in New Jersey, decided that legislation was necessary to overcome the defect. As a result of this experience the following law was passed in 1911:

AN ACT relative to the furnishing of drinking water on passenger trains.

Section 1. Every railroad car while in use for the transportation of passengers, upon a train running thirty miles or more, shall be provided with a sufficient quantity of pure drinking water in such place or places in the car as will be convenient for the passengers, and with individual drinking cups which shall be accessible to the passengers. No charge shall be made for the water or for the drinking cups. The water and cups supplied shall be subject to the supervision and approval of the State Board of Health; and the said board shall enforce the provisions of this act. Equivalent methods of furnishing drinking water free to the passengers may be provided, instead of the foregoing, provided that the same are approved by the State Board of Health.

Section 2. Violations of this act shall be punished by a fine of not less than twenty-five dollars for each trip made by a car used for transporting passengers and not provided with water and utensils for its distribution in accordance with the provisions hereof.

Section 3. This act shall take effect on the fifteenth day of June in the current year.

We believe that with the passage of a similar law in New Jersey, every objection to the present law will be removed.

The law as it now stands has not only a bearing upon the transmission of disease but is also an object lesson in cleanly habits which will be valuable. The fact that the use of the common drinking cup is prohibited has called the attention of the public in a way that nothing else could to the many methods of disease transmission, and that the entrance of disease germs by the mouth is especially to be avoided. When the public at large have learned this valuable lesson, the number of cases of typhoid fever and tuberculosis should diminish.

OPHTHALMIA NEONATORUM.

Through the efforts of the medical profession of the State the Legislature of 1895 passed a law requiring midwives, nurses or

relatives having charge of infants born when no medical attendant was present to make a report to the local board of health if the eyes of the infant became inflamed, swollen, or reddened, or showed any unnatural discharge, within two weeks of its birth. The local board of health was directed to immediately place such cases in charge of a legally qualified practitioner of medicine.

The Secretary of State was required to furnish copies of the law to physicians and midwives. The penalties under the act were fine or imprisonment.

The method of distribution of copies of the law and its dual penalties were not reasonable, and in 1910 the law was amended in these particulars. During the legislative session of 1911, through the efforts of citizens of the State who had been studying the causes of blindness, a further supplement to the law of 1895 was passed, which is as follows:

A SUPPLEMENT to an act entitled "An act for the prevention of blindness in the State of New Jersey," approved March eleventh, one thousand eight hundred and ninety-five.

BE IT ENACTED by the Senate and General Assembly of the State of New Jersey:

1. The State Board of Health shall furnish, free of cost, to physicians and midwives, registered under the laws of this State, such prophylactic remedies as it may deem best for the prevention of ophthalmia neonatorum, together with such instructions as it may deem necessary for the proper administration of the same.

2. The sum of two thousand dollars is hereby appropriated for the purpose of carrying out the provisions of this act when included in the annual or supplemental appropriation bill.

3. This act shall take effect immediately.

Approved April 6th, 1911.

In carrying out the provisions of this act a careful study was made of the various outfits for the prevention of cases of ophthalmia neonatorum which had been adopted by the several states in which laws requiring the distribution of such outfits had been enacted.

Before finally adopting the outfit which is at present in use, a leading ophthalmologist was consulted who expressed the opinion that many objectionable features in other outfits were not found in the one selected. The outfit consists of a square blue bottle having a capacity of one ounce. Attached to and forming the

stopper, which is a rubber bulb, is a glass eye dropper which, when in place, is partially submerged in the nitrate of silver solution.

Each vial has in it an ounce of 1 per cent. nitrate of silver solution.

These bottles are inclosed in stiff cardboard mailing cases. A circular giving full directions to physicians and midwives as to the care of the eyes of newly born infants and the use of the nitrate of silver solution is wrapped about each bottle before placing it in the case. The total expense of furnishing these outfits to the physicians and midwives in the State was \$900.00. A sufficient number of outfits are kept on hand to meet future requisitions.

Physicians have expressed hearty approval of the law and will doubtless make use of the preventive treatment. With midwives the proper use of the nitrate of silver is doubtful, and in dealing with them it will be necessary in some way to give individual instruction in the technique of applying the remedy.

With increased knowledge of the means of the prevention of ophthalmia neonatorum and methods of applying preventive measures the beneficial effect of the law in reducing the cases of blindness due to neglect upon the part of physicians and midwives to adopt such measures should be apparent.

COLD STORAGE.

The attention of the public has been directed for several years to the necessity for some legislative enactment to control the conduct of cold storage warehouses. The public press has at times been filled with articles in some instances containing exaggerated statements of the amount of decomposed and deleterious foods which were placed in cold storage and finally reached the food consumer. Evidence was produced in cases brought by the prosecutor of Hudson county against cold storage warehouse companies sufficient to indicate the necessity for legislative regulation. Jersey City, located as it is, so near to New York City, has been chosen by various companies as the site for cold storage warehouses. These warehouses are in large part used for the storage of articles of food which are to be consumed in New York City, and only a small portion of the cold storage foods are sold to in-

habitants of New Jersey. Unless therefore laws were passed to control the conduct of the cold storage business the State might be open to criticism for failure not only to protect the citizens of New Jersey, but for neglect to safeguard the inhabitants of neighboring states against deleterious foods. For two years bills were introduced in the Legislature having in view the control of cold storage warehouses. The formulating of a law which would afford protection to food consumers and yet be just to the warehouse owners was an extremely difficult problem. Many hearings were held by legislative committees and the advice of the State Board of Health was sought. Finally an agreement was reached and the present law (chapter 189 of the laws of 1911) was passed. The law, although not as complete as it should be, is a step in the right direction, and experience with its enforcement will indicate wherein it may be improved. The law requires the dating of goods placed in cold storage in the State, and where articles are brought from cold storage in other States to be again placed in cold storage in New Jersey the dates when articles were originally stored in other States must be given. All articles on storage at the time the act took effect upon leaving cold storage warehouses are required to be marked with the dates when the articles were received from cold storage. The maximum limit of time for the storage of foods in the warehouses is fixed at ten months unless an extension is granted by the State Board of Health. The owners of cold storage warehouses are required to make quarterly reports to the State Board of Health of goods on storage, and also to report all goods which have been in storage for a period of ten months. The transfer of goods from one warehouse to another for the purpose of evading the act is forbidden, and restorage of cold storage goods after being placed on sale is prohibited. The State Board of Health is empowered to adopt rules and regulations governing the conduct of cold storage plants. After careful consideration the following rules and regulations were adopted by the Board:

1. For the purpose of enforcing this act the term "Cold Storage" will be held to mean the storage of foods, intended for sale or distribution, in establishments employing refrigerating machinery or ice for the purpose of refrigeration, for a period exceeding thirty days, at or below a temperature of forty degrees Fahrenheit; and the term "Cold Storage Warehouse" will be held to mean any establishment employing refrigerating machinery or ice for the purpose of refrigeration, in which foods intended for sale or distribution are stored at or below a temperature of forty degrees Fahrenheit for a longer period than thirty days.

2. Articles which are held at low temperatures for temporary protection only, for periods less than thirty days, will not, for the purposes of this act, be regarded as being held in cold storage, and such articles need not be dated, but such articles must be kept in separate rooms or enclosures from which articles are kept in cold storage, and persons operating cold storage warehouses must keep an accurate record of the date or receipt and removal of such articles, which record shall at all times be open to inspection by agents of the State Board of Health. *Provided, however,* that if articles of food which have been kept at a low temperature for temporary protection are held for more than thirty days at such low temperature, they shall then be regarded as having been placed in cold storage, and shall be marked, in the manner provided in rule four, with the day, month and year when the period of temporary protection began, and such articles shall be removed from the room or enclosure in which articles temporarily protected are kept, and shall be placed in rooms or enclosures used for cold storage.

3. Articles of food intended for cold storage shall, when they are offered for or placed in storage, be enclosed in boxes, barrels, crates or other packages sufficiently strong and tight to prevent them from being injured by careless handling, unless the articles are of such a character that it is impracticable to pack them in containers.

4. When articles of food contained in packages are placed in cold storage, each package shall be legibly marked in plain figures, not less than three-eighths of an inch in height, with the day, month and year when such articles were placed in storage, and when articles of food not contained in packages are placed in cold storage, each individual article shall be marked in the same manner. Figures separated by hyphens may be used to indicate dates, and it will be regarded as sufficient dating if the last two figures of the number denoting the year when such articles of food were placed in cold storage are used. For example: June 26th, 1911, may be written: 6-26-11. Whenever tags or labels are used on which dates are to be marked, they must be securely fastened to the articles to which they are affixed.

5. Articles of food held at low temperatures during the process of manufacture will not be regarded as being held in cold storage within the meaning of this act, and such articles need not be dated.

6. When articles of food have been kept in cold storage for ten calendar months, report of such fact shall be made to the State Board of Health by the persons having custody of such articles, and such articles shall be held in cold storage by such persons until they have been inspected by the agents of the State Board of Health and released by order of the Board.

7. Upon receiving applications therefor, the State Board of Health will issue temporary consent to persons operating cold storage warehouses, permitting them to receive articles of food which have been in cold storage in other states, but which do not bear the dates of entrance into such storage; which consent shall be good only until such articles have been inspected by agents of the State Board of Health. If upon inspection it is found that such articles are in proper condition for further storage, and if it appears that the person having custody of them has been unable to ascertain the date on which they were placed in cold storage in another state, a permanent consent for the storage of such articles may issue. If it is found that such articles are in such a condition that further storage will impair their purity, quality or wholesomeness, permission for further storage will be refused.

8. For the purpose of facilitating the removal of articles of food from cold storage before the expiration of the statutory period of ten calendar months, persons operating cold storage warehouses shall notify the owners of all

articles of food stored by them of the date when such articles will have been in storage ten months, at least fifteen days before such ten months have elapsed.

9. Until further notice, the following classification of foods will be used by persons operating cold storage warehouses and refrigerating plants in making quarterly reports of articles of food held in cold storage:

Eggs, case.	Fish (including shell fish), fresh.
Eggs, broken.	Fish, salted, smoked or pickled.
Butter.	Dried fruits.
Cheese.	Nuts.
Poultry.	Green fruits.
Game.	Green vegetables.
Meat, fresh.	Miscellaneous.
Meat, salted, smoked or pickled.	

Shell eggs are to be reported in terms of cases and dozens, all other articles to be reported as packages, and, in so far as the same is practicable, by weight. Articles not intended for use as food products not to be reported.

10. Requests for permission to store food for a longer period than ten calendar months must be made by the owners thereof to the State Board of Health, upon blanks which will be furnished by the Board upon application. No such request will be considered by the Board unless a satisfactory reason, stating why such extension of storage is desired, is given.

Before such requests are granted the articles of food to which they refer must be inspected by agents of the Board. Requests should therefore be made at least two weeks before the statutory time limit for storage has expired.

11. No materials in a state of decomposition or putrefaction or in any other condition which renders them unfit for use as food shall be placed in cold storage in the same room or enclosure with articles intended for use as food.

12. When articles of food, held in cold storage, are removed from the packages in which they were contained and placed in other packages, the date of original entry into cold storage of such article shall be placed upon the containers into which they have been transferred, and if articles of food which were placed in cold storage on different dates are placed in the same container, the date of storage of the article longest stored shall be placed upon the container to which such articles have been transferred.

The divisional report made by R. B. Fitz-Randolph, who is the director of the laboratory and has supervision over the enforcement of laws relating to food and drugs, reviews the work which has been done by the department to secure the enforcement of the law.

SUPERVISION OVER OYSTERS, CLAMS AND SHELL FISH.

The occurrence of epidemics of typhoid fever, due to the eating of oysters and clams taken from sewage polluted waters has caused special activity on the part of State and national authorities in a combined effort to secure as far as possible such protection of the industry as will relieve consumers of the danger of contracting the disease by this method of infection. The State of New Jersey

is especially interested in the problem as the industry in the State represents an output returning between three and four million dollars each year. These products are not only consumed within the State, but are shipped in large quantities to many parts of the country. It is necessary therefore to protect the citizens of our own State against any possibility of infection arising from oysters and clams taken from the waters of the State, and the obligation rests upon the State of protecting foreign consumers. In 1909 the national authorities issued an order forbidding the sale of oysters which had been "floated," that is taken from their original locations in the various bays and rivers of the State and placed for a short period of time in semi-fresh water. This action on the part of the national authorities led to a conference at Washington, D. C., at which oystermen from all parts of the country were present. The contention of the Department of Agriculture that the floating of oysters was in violation of the Federal food law, was thoroughly discussed, and much valuable evidence was given on the practical side of oyster production. Following the conference a change was made in the original ruling of the Agricultural Department by which the sale of "floated" oysters was permitted when the oysters were "floated" in waters practically free from pollution by sewage, and having a certain salt content.

At the session of the State Legislature held prior to the change in the ruling of the Department of Agriculture the State Board of Health, realizing the necessity for supervision of the oyster industry because of its relation to public health, suggested the passage of a law giving the Board the power to secure a lessening of the pollution of streams in which oysters are floated and to grant licenses to oyster growers when upon investigation it is found that the oyster beds are free from pollution. The law was passed, and the fact that the State had taken this advanced step in safeguarding the industry doubtless was a moving factor leading to the alteration of the original ruling of the Department of Agriculture. Under the provisions of the law the State Board of Health, co-operating with the local boards of health having supervision over the localities in which the oysters are grown, has almost entirely removed sources of pollution along the Maurice River. The law required the State Board of Health to issue licenses to owners of oyster beds when warranted by conditions. This method was unsatisfactory, and it was deemed advisable to secure a change in the

law by which instead of licensing the oyster planter definite power should be given to prohibit the sale of oysters subject to pollution or other conditions dangerous to health. Chapter 146 of the laws of 1911 carries out this plan. Under its provisions the State Board of Health no longer issues licenses. The duty is imposed upon the Board of inspecting the various oyster and clam beds in New Jersey for the purpose of ascertaining the sanitary condition of these beds and the fitness of the oysters for use as food. When unsanitary conditions exist or the product is unfit for use as food the Board may condemn the beds and prohibit the sale of oysters therefrom. The clam and shell fish industries are also, in accordance with the law, under the supervision of the State Board of Health. Violations of the law are punishable by fine, and when repeated violations occur application may be made to the Court of Chancery for an injunction to restrain such violation. This amendment to the original act, we believe, will enable the Board to protect consumers and regulate the industry so that it may not be injured by unwarranted attacks upon the method of its conduct.

FOOD LAW PENALTIES.

When the original act to secure the purity of foods, confectionery, drugs, &c., was passed provision was made that if the State Board of Health brought an action to recover a penalty for violation of the law the amount of money recovered should be paid into the State Treasury, and when such action was brought by a local board of health the penalty recovered should be paid into the municipal treasury. In 1907 there was a revision of this law, and through an oversight all penalties collected, whether the action for recovery was undertaken by the State or local board of health, were paid into the State Treasury. This disposition of penalties collected was unjust, as when the local board of health brought suit considerable expense was involved in collecting evidence and legal fees with no money returned to meet these expenditures. As a result of the change in the law local boards in many instances discontinued active work in the prosecution of violators of the food law. The Legislature of 1911 amended the law (see chapter 353 of the laws of 1911) by providing for the payment of penalties collected by local boards of health into the treasury of the

local municipality in which suits for violation of the food laws were brought. There is now no reason for local boards failing to carry on a more active campaign for the enforcement of the food laws of the State.

ICE CREAM.

In the supplement to the act to secure the purity of food, enacted in 1906, provision was made for supervision by the State Board of Health of butter, cheese and condensed milk and for the regulation of the places where such products were placed, stored or kept. No allusion was made to ice cream. Local boards of health under the provisions of chapter 68 of the laws of 1887 were empowered to pass ordinances to secure the sanitary condition of all places in which foods were manufactured. This power was general in its nature and special laws, the enforcement of which was entrusted to the Department of Labor, giving to that department the power to regulate places where foods were manufactured, tended to relieve local boards of health of any responsibility in connection with making special effort to enforce sanitary regulations in factories or places where foods were manufactured. Inspections made of places where ice cream was manufactured revealed conditions calling for immediate action. Many of these establishments were located in cellars where there was insufficient light, the floors made of absorbent materials retaining dirty decomposing liquids and no provision made for the exclusion of flies. In many instances no provision was made for cleansing the hands of attendants, and utensils and apparatus used in making the ice cream were unclean. The methods of handling the cream were such as to expose it to contamination and possibly to infection. With a knowledge of such unsanitary conditions existing in ice cream factories it was not difficult to secure remedial legislation. It was only necessary to add ice cream to the foods mentioned in the act of 1906. Chapter 59 of the laws of 1911 makes the provisions of the original act apply to ice cream. This law forbids the use of any portion of a building, in which ice cream is manufactured, as a dwelling, laundry or kitchen, an exception being made in cases where, prior to the passage of the law, ice cream factories were located in dwellings, permitting the business to be continued if the sanitary conditions and arrangements were such

as could be approved by the State Board of Health. Ice cream manufacturing companies are required to obtain a license from the State Board of Health under such rules and regulations as the Board may adopt. Chapter 327 of the laws of 1911, which is a supplement to the law regulating factories and workshops, also has in it a special provision that no ice cream shall, after the passage of the act, be manufactured in any cellar, basement or place unless after inspection of such place of manufacture by the agents of the Board of Health of the State a license shall be granted by said Board certifying the condition and arrangement of such ice cream factory to be sanitary, and giving power to revoke such license at any time for cause. With this dual supervision over the manufacture of ice cream there should be an immediate lessening of unsanitary conditions existing in these establishments.

As a guide for owners of ice cream manufacturing plants and for the purpose of giving definite directions as to the conduct of the business the following rules and regulations were adopted by the Board:

1. The site for an ice cream factory should be preferably above ground; the surroundings should be clean and free from all refuse accumulations.
2. No building space should be used for the manufacture of ice cream which is not well lighted and ventilated, and which is not provided with a suitable floor; if such room or space be a cellar or sub-cellar, or be located in a cellar or sub-cellar, the floor of the same must be tight, preferably concreted, and properly graded and drained. The surfaces of the sidewalls and ceilings of all rooms in which ice cream is manufactured shall be smooth and free from ledges, projections or crevices which may afford lodgment for dirt and dust.
3. No ice cream factory shall be located or maintained within any kitchen, wash room, workshop or inhabited room, nor in proximity to any privy, cess-pool or urinal, nor in any room or space which is not of such size or construction as to permit the entire separation of all milk and its products, both in the process of handling and storing, from all sources of contamination, either by dirt, noxious gases, infective organisms or substances, or anything liable to alter unnecessarily the quality of such milk or its products.
4. Every person maintaining an ice cream factory shall have a sufficient number of receptacles, made of non-absorbent material, for the reception, storage and delivery of milk, cream and ice cream, and shall cause them to be kept clean at all times; having delivered any receptacles to a consumer or customer, shall not again use the same for the reception, storage or delivery of milk, cream or ice cream, or any other product, until it has been to his personal knowledge, properly cleansed after such use.
5. Every person maintaining an ice cream factory shall provide for the use thereof a supply of pure and wholesome water sufficient for the proper washing of all cans and appliances.
6. Every ice cream factory shall be equipped with adequate facilities for cleansing containers and utensils used in the handling of milk, cream or the

finished product. The surfaces which come in contact with the milk or its manufactured products shall be exposed daily, after a thorough washing, to the application of live steam. If, however, a very small quantity of ice cream is manufactured daily, and the installation of a steam appliance is impracticable, then the heating and washing facilities must be approved by the Chief of the Division of Creameries and Dairies.

7. Every factory must be provided with proper draining racks, and the same should be thoroughly well cleaned.

8. All raw materials, pending their manufacture into ice cream, shall be stored in such a way that their wholesomeness will not be impaired.

9. The re-freezing of milk, cream or ice cream returned to the factory is prohibited.

10. In no case should the operator's hands come in contact with the ice cream, and suitable appliances should be provided for removing the finished product from the dasher and interior of the ice cream freezer.

11. All employes must be neat in their habits; their outside garments must be of material which can be readily cleansed by washing, and such garments must be changed at weekly intervals. Every ice cream factory shall be equipped with basin, soap and towels so that the employes can wash their hands as often as necessary.

12. All doors, windows or other openings shall be thoroughly screened so as to prevent the entrance of flies or other insects between the first day of April and the thirty-first day of October.

MILK STANDARD.

It is seldom that we are called upon to record a backward step in the public health legislation of the State. For years it has been the policy of the Board to insist upon more rigid laws for the protection of the public health, and especially in regard to the protection of foods.

The standard for milk was by law placed at 12 per cent. total solids, and with the enforcement of this requirement there has been a steady improvement in the milk sold throughout the State. Gradually milk below the standard was being forced out of the market and many dairymen by the selection of better cattle and improved scientific methods of feeding were producing a milk well above the legal requirement. With the increase in the number of Holstein cows in the dairies and the tendency to have a herd consist entirely of these animals, it became more and more difficult for the owners of such herds to maintain the standard of 12 per cent. total solids, and suits were brought for violation of the law and penalties were collected. The farmers argued that the standard was too high and could not be maintained.

A bill was introduced during the legislative session of 1911 reducing the legal standard for milk from 12 per cent. total solids to 11.30 per cent. When the bill was under discussion the State Board of Health took the position that the 12 per cent. standard was a fair one, and that any lowering of the standard would put low grade milk in competition with high grade milk. The bill, however, became a law and the 11.30 per cent. total solids is the legal standard for milk in our State. Since the enactment of the law many dairymen who were endeavoring to produce and distribute a high grade of milk have expressed the opinion that an error has been made in reducing the standard, which will of necessity result in an injury to the great dairy interest of New Jersey. A trial of the present law will, we believe, ultimately lead to its repeal and a return to the old standard.

REPORTING OF CONTAGIOUS DISEASES.

The act, requiring the reporting of contagious diseases, passed in 1895, was designed to secure prompt and accurate reports by physicians to local boards of health of all cases of contagious diseases occurring under their professional supervision. Certain diseases were specified, and the State Board of Health was empowered to add to this list such diseases as might be classed as especially dangerous to health.

Several diseases, not in the original law, have been added to the list of reportable diseases, by resolution of the Board. These are placed in the law of 1911 so that physicians reading the law may be fully cognizant of the diseases which shall be reported.

The law of 1895 required secretaries or registrars of local boards of health to send each week a report of cases of contagious diseases occurring in each sanitary district. Experience has shown that it is difficult to fix the responsibility for failure to make these weekly reports, and the effort is made in the new law to make some one responsible and thus secure more complete and accurate reports.

The selection of this person to receive the reports is optional with the local board of health, but some one must be appointed to carry out the intention of the law.

An additional change from the provision of the original act provides for the keeping of more accurate records by local registrars and for the payment of ten cents for each report forwarded to the State Board of Health.

It is believed that this method will secure more prompt and full returns and will be of great assistance in checking the spread of contagious diseases throughout the State. A similar plan for securing reports of births, marriages and deaths has been followed in this State for thirty years and has resulted in placing New Jersey highest in list of registration states in this country. Similar plans have also been adopted in other states.

All work directed to the prevention and control of communicable diseases is based upon the securing of a knowledge of early cases and effective measures cannot be adopted after any given disease has reached an epidemic stage. The enactment and enforcement of this law will doubtless lead to such immediate knowledge on the part of the State Board of Health of outbreaks of preventable diseases that advice and assistance may be rendered local boards of health in time to prevent extensive epidemics, and our State will be placed upon an equal footing with other progressive states in dealing with preventable diseases.

COMMUNICABLE DISEASES ON DAIRY PREMISES.

In bringing suits for violation of chapter 47, laws of 1909, which requires physicians to report to the State Board of Health all cases of communicable diseases occurring on dairy premises, the point was raised that as it was a supplement to the act of 1887 the title of the act was not consistent with its provisions, and that the act was therefore unconstitutional. To overcome this objection, the law passed this year (chapter 380, laws of 1911), is made a supplement to an act for the protection of the public health, passed in 1895, and will overcome the constitutional defect.

Under the act of 1909, physicians are required to make reports of cases of certain communicable diseases occurring on dairy premises, but no provision was made for reporting cases of such diseases occurring in families of persons who are employed on dairy premises.

It is obvious that the reporting of cases of contagious diseases occurring in the families of employes residing away from dairy premises is as essential as of cases occurring on the premises. As an illustration, a person employed on dairy premises might have a case of diphtheria in his family, and after caring for the sick go directly to the dairy and assist in milking. In this way the milk could become infected and cause an epidemic among the consumers of the milk. The wording of the section bearing upon this point is such that the physician is protected, as the following phraseology is used: "Every physician who shall have knowledge," etc., "that a person is employed on dairy premises."

It was the intention of the Board to provide in the law for the payment to physicians of the sum of twenty-five cents for each report of a case of contagious disease existing on dairy premises, but this plan was not carried out, as it was decided that it was a duty the physician owed the State, and as he received from the State certain privileges such as exemption from jury duty, no remuneration for such a slight service should be demanded or allowed.

Experience has shown that since the original act was passed no epidemics have been traced to infected dairy premises where the cases were promptly reported and prompt protective measures were adopted.

MARRIAGE LICENSES BY DEPUTY REGISTRARS.

When application was made for a marriage license under the provisions of the marriage license law of 1910 it was necessary for the registrar or duly authorized official to personally issue the license. No provision was made for the issuing of licenses by any person or persons other than the registrar. In the event of the absence of the registrar, or his detention by illness, the contracting parties could not secure a license.

This defect in the original law has been remedied by an amendment giving any official authorized to issue a marriage license the power to appoint a deputy who may issue marriage licenses during the absence of the said duly authorized official.

MARRIAGES WITHOUT CONSENT OF PARENTS.

In the carrying out the provisions of the marriage license act of 1910 it was found that there were some instances where a marriage license should be granted where the consent of parents to such marriage could not be obtained. In cases of seduction the male applicant for license being a minor, although the parties involved were willing to marry, parents on account of a difference in religious beliefs of the contracting parties or for other, to them, good and sufficient reasons, would refuse to give consent.

From the standpoint of morality and public policy under such circumstances, the marriage of the parties should not be interfered with.

To overcome the defect in the original law the following amendment was passed by the Legislature of 1911:

CHAPTER 318.

AN ACT to amend an act entitled "An act concerning marriages (Revision of 1910)," approved April eleventh, one thousand nine hundred and ten.

BE IT ENACTED by the Senate and General Assembly of the State of New Jersey:

1. Section seven of the act to which this is amendatory be and the same is hereby amended so that it shall read as follows:

7. If any such male applicant for a license to marry shall be a minor under the age of twenty-one years, or any such female applicant under the age of eighteen years, such license shall not be issued unless the parents or guardians of the said minor, if there be any, shall first certify under their hands and seals in the presence of two reputable witnesses, their consent thereto; which consent shall be delivered to the assessor, registrar or clerk issuing the license. If the parents, or either of them, or guardian of any such minor shall be of unsound mind, then the consent of such parent or guardian to the proposed marriage shall not be required. If any such male applicant for a license to marry shall be a minor under the age of twenty-one years, and shall have been arrested on the charge of sexual intercourse, with a single, widowed or divorced female of good repute for chastity, and that such female has thereby become pregnant, said license to marry such female may be issued to any such applicant without the consent of the parents, or either of them, or of the guardian of either of said parties to such proposed marriage.

2. This act shall take effect immediately.

Approved May 1, 1911.

DEATHS IN HOSPITALS.

There is an increasing agitation throughout the State of the advisability of having county and municipal hospitals for the care of communicable diseases. In the county of Essex a contagious disease hospital is maintained by the Board of Freeholders to which patients may be sent from any part of the county. The State institution for the care of soldiers is located at Kearny, Hudson county, and that for sailors at Vineland, Cumberland county. When patients in the State institutions above mentioned died of a contagious or infectious disease the death certificate was filed with the proper officer of the municipality in which the institution was located. Many of the decedents were from other parts of the county or State, and not permanent residents of the sanitary district in which death occurred. In estimating the death rate of the counties or municipalities having institutions for the care of cases of contagious and infectious diseases it was found that the death rate was slightly increased by institutional deaths which made it appear that the municipality or county in which such institutions were located had a higher death rate than other municipalities or counties of the State. The including of such deaths of non-residents in the estimate of the total death rate was illogical and misleading. A supplement to the act of 1888 requiring the reporting of vital statistics was passed during the legislative session of 1911 (see chapter 154 of the laws of 1911), which requires that no death occurring in hospitals for contagious diseases maintained by counties of the State shall be included in the deaths occurring in the municipality in which the hospital is located unless the person dying had last place of residence in the municipality in which the hospital is located. In estimating death rates provision is made for assigning the deaths of those dying in institutions to the locality from which they were sent to the hospital. Physicians employed in the hospitals named in the act shall, in the death certificates, state the institution in which the death occurred and the former or usual residence of the decedent. The penalty for violation of the act is twenty dollars. This amendment will tend to make the estimate of the death rates in municipalities in which there are contagious disease hospitals more accurate, and the necessity for the law will be more apparent as the number of such hospitals in the State is increased.

LICENSING OF PLUMBERS.

Repeated efforts have been made by the plumbers of the State to secure legislative recognition, and bills introduced for this purpose have failed to become laws because of defects which were difficult to overcome. These measures would on the one hand be favored by the master plumbers and on the other opposed by journeymen plumbers. The only bill introduced which received favorable consideration, yet failed to become a law, was one which provided for the appointment of a central board for the examining and licensing of plumbers. During the last session of the Legislature a renewed and successful effort was made to secure the enactment of a law governing the licensing of plumbers (chapter 307 of the laws of 1911). The act gives local boards of health the power to pass ordinances and make rules and regulations for the purpose of regulating the practice of plumbing; to issue licenses and to appoint an examining board to determine the qualifications of applicants for licenses. This examining board is to consist of three persons, one of whom shall be a plumbing inspector in the employment of the local board of health, one a master plumber and one a journeyman plumber. Although many objections to this method of regulating plumbers were brought to the attention of members of the Legislature when the law was under consideration, the plumbers were so insistent upon recognition and some control of the business that the law was enacted. There are approximately 470 boards of health in the State, and of this number 234 are in townships, and there are at least 161 small boroughs in which there is no regularly appointed plumbing inspector, so that in these sanitary districts no such licensing board as specified in the act could be organized unless a plumbing inspector were appointed. No plumbing inspector can be appointed to serve on a local board of health without obtaining a license from the State Board of Health. As a rule in townships and small boroughs there is no plumber qualified to take the examination. Under these conditions two-thirds of the sanitary districts of the State cannot comply with the law. If a licensing board were appointed who favored only the employment of home labor, the improper enforcement of the law would result in the exclusion of plumbers living outside a given sanitary district from competitive bidding

on plumbing work. Further, the plumbing inspectors appointed by local boards of health are not members of the boards, and were they placed upon the special boards for licensing plumbers it would virtually be a relegation of the power of the boards to non-members. These defects of the law can readily be remedied and after a thorough trial of it doubtless new legislation applying to all the sanitary districts of the State, and containing a provision for the appointment of a central examining licensing board to which all plumbers in the State shall apply for licenses will be enacted.

Annual Conference of Local Boards of Health.

The State Board of Health was authorized by the Legislature several years ago to hold a conference of local boards of health for the purpose of discussing health matters relating to the numerous sanitary districts of the State. Two conferences were held. The meetings were attended by a few representatives of local boards of health while many of the larger cities and towns sent no delegates. The papers presented at the meetings and the discussions on the papers which were read were of interest, a full account of the conference being published in the yearly reports of the State Board of Health.

Attendance at the meetings of the New Jersey State Sanitary Association, which are held each year in the month of December, was affected by the conferences of local boards of health held in October. Taking into consideration the apparent lack of interest on the part of local boards of health and the time of holding the meeting of the New Jersey Sanitary Association, it was decided that the meetings should be combined. This policy has been followed for two years, and the result is far from satisfactory. The representatives of local boards have had no opportunity at the meetings of discussing problems in which there is a vital local interest and have felt that it would be wiser to return to the plan of holding separate meetings.

During the year an organization, with a large and representative membership of Health Officers and Inspectors of New Jersey, has been formed. The members of the association are ready and willing to assist in making the annual conference a successful one. The next conference will be held in January, 1912, as a meeting in October of the present year would conflict with other meetings of a similar character. An effort will be made to make the meeting an instructive one and the opportunity afforded members of local boards of health to exchange views and compare notes on the methods employed in the sanitary districts of the State to secure the enforcement of sanitary regulation will be extremely beneficial.

MARITIME QUARANTINE.

Only one of the eight ports of entry for shipping in New Jersey is provided with a health officer of the port. This is the port of Perth Amboy which, on account of its nearness to the port of New York, is showing rapid increase in the number of vessels entering each year. The port is also protected by the Marine Hospital Service, and a representative of that department inspects all foreign vessels entering the port. National and State authorities have co-operated in the quarantine service, and the record for the past year shows that they have been alert and active in the effort to detect cases of communicable diseases occurring on incoming vessels. Dr. G. W. Fithian, the Health Officer of the port, appointed by the Governor of the State, in his annual report shows that under his supervision one hundred and fourteen (114) vessels, crews and cargoes have been examined. Forty-seven (47) of these vessels were from foreign ports and sixty-seven (67) were coastwise. Seventy-three (73) were steam vessels and fifty-one (51) sailing vessels. The fees collected from the vessels examined amounted to \$404.50. The officer of the port, being somewhat in doubt as to his duty in reference to vessels first entering the port of New York, referred the example of a steamship leaving Liberia, discharging a portion of cargo in New York and subsequently entering the port of Perth Amboy to the Attorney General for an opinion. The opinion was as follows:

STATE OF NEW JERSEY,
TRENTON, N. J., September 15th, 1910.

Dr. G. W. Fithian, Health Officer of Perth Amboy, Perth Amboy, N. J.:

DEAR SIR—Your letter of July 20th to the State Board of Health was referred by that body to this office.

You state the case of a vessel leaving Liberia, discharging a portion of cargo in New York, and subsequently entering the port of Perth Amboy, and desire to know what are your duties in reference to this vessel, and what fees, if any, are to be collected.

Your duties as Health Officer, seem to be those included in sections four, five, six, seven, eight and nine of the act of March 21, 1900.

This vessel clearly did not enter the port of Perth Amboy from any port in the United States, south of Cape Henlopen, or from any West India, Bahama or Bermuda Island port, but came from the port of New York, I assume at a time when there was no communicable disease existing in the port of New York, in the sense where that term would be ordinarily understood. Unless you had reason to believe that there was matter contained in the cargo which might communicate disease when unloaded, it seems to me that you had nothing what-

ever to do with this vessel, nor to collect any fees therefrom. If there had been anything about the situation which made an inspection necessary to determine whether such vessel came, in fact, from a port in which there was a communicable disease, then, of course, it was your duty to board such vessel and make an inspection to determine the fact. There does not seem, however, to be any fee provided for an inspection made under these circumstances.

If the vessel had come direct from Liberia, I think you would be entitled to assume the likelihood of disease to exist to such an extent as to warrant an inspection to such an extent as might be necessary to determine whether such risk actually existed. If you should find that it did not exist, you would be entitled to receive for the examination of such vessel the sum of five dollars, as coming from a foreign port; two dollars for examination of every one hundred, or fraction of one hundred, steerage passengers which might exist; in case a permit should be issued, twenty-five cents. If you should discover such conditions existing as to make a period of quarantine, or other operations provided by the statute necessary, these duties, I think, are sufficiently set forth in the statute, and the fees prescribed with sufficient clearness to give you no difficulty.

It is impossible to set down absolutely a schedule of fees, because these would depend upon the circumstances of individual cases.

Very truly yours,

NELSON B. GASKILL,
Assistant Attorney-General.

Knowing that cases of cholera had arrived at the quarantine station of the port of New York, and that cases of diarrhoea should be held as suspicious until found otherwise, Dr. Fithian, acting with the Federal officer quarantined the steamship Kirby Banks which arrived July 25th, for twenty-four hours until the case of a seaman suffering from chronic diarrhoea could be investigated. On receipt of a negative bacteriological report the steamship was allowed to dock and permit given to land cargo and discharge crew.

The health officer of the port was notified that Seaman Jose Montenegro of the steamship Kirby Banks had died September 6th, while the steamer was at dock at Maurer, N. J. A post-mortem examination was made and the cause of death found to be chronic malaria. Permission was then given to proceed with the discharge of cargo.

The occurrence of cases of cholera during the summer on vessels coming into the port of New York show the necessity of maintaining rigid supervision of all vessels entering the port of Perth Amboy, and the service rendered thus far has been entirely satisfactory.

CONTAGIOUS DISEASES OF ANIMALS.

During the session of the Legislature of 1911 a law was enacted which changes in marked degree the organization of the State Bovine Tuberculosis Commission and the control of this disease. Under the provisions of the act the president of the State Board of Agriculture appoints a Commission on Tuberculosis Among Animals. The powers conferred by the act include the inspection of suspected animals, and when it becomes necessary on account of the existence of a case of contagious disease in an animal to destroy the animal, a valuation may be placed on the animal and three-quarters of the valuation is paid to the owner. The Commission is authorized to issue certificates to owners of animals which upon examination are in good health and condition. Many complaints have been made by buyers of dairy cattle that animals coming from other states, and certified as free from tuberculosis, have upon examination been condemned as having the disease. The annual loss due to the destruction of these animals, and the exposure of healthy animals in the State to the disease, which resulted from this apparent carelessness on the part of persons residing outside of the State, was considerable. The new law gives the power to require certificates of imported animals and to retest suspected animals, and all imported animals are to be inspected by a representative of the Commission. Cattle not imported in accordance with the law may be quarantined. It is apparent that the supervision over tuberculosis in cattle is placed entirely in the care of the Tuberculosis Commission, and the only action taken by the State Board of Health when cases of this disease are reported is to refer them to the Commission. The title of the act, however, which reads in part as follows, "An act concerning contagious and infectious diseases among cattle," would indicate that diseases other than tuberculosis, such as anthrax, blackleg, &c., are to be under the supervision of the Commission. A reference to section 2, paragraph 5, of the act would indicate that the intention of the law is that its provisions should apply only to dairy animals, as these are specifically mentioned. The supervision over diseases of cattle, other than tuberculosis, is therefore placed in charge of the State Board of Health. Only seven cases of tuberculosis in cattle were reported to the State Board of Health during the year,

and in each instance the case was referred to the Tuberculosis Commission.

Blackleg.—This disease, which appeared for several years in Sussex county, is apparently under control. Three cases of the disease were reported during the year and prompt measures were adopted to limit its spread. Free vaccination of animals on infected meadows or that had been otherwise exposed to the infection was offered to owners. As this offer has been made from year to year and many cattle owners have accepted the protective inoculation of their cattle, we believe that the disease is now under control, and if each year before cattle are turned out on the meadows the protective vaccination of the cattle is continued no further cases should be reported.

Cowpox.—A herd of dairy cattle in Kearny, Hudson county, were affected with this disease. The disease was not recognized by the owner of the cattle, and when the attention of the local board of health was directed to the condition of the cattle nearly all the affected animals were recovering. The condition of the udders and teats of the cows indicated clearly the nature of the disease and the cows were quarantined. Twenty-three cows contracted the disease. The owner of the dairy decided to discontinue the dairy and purchase milk from other milkmen.

Rabies.—This disease has shown an increase during the year, and a total of seventeen cases have been reported. This, however, does not cover all cases which have occurred, as in the laboratory of hygiene of the Board out of the sixty-six specimens from animals, suspected of having rabies, which were examined during the year, forty were positive and twenty-six negative. The laboratory offers every facility for the examination of suspected animals, and the State Board of Health has an arrangement with the health authorities in New York City by which persons bitten by dogs suspected of having rabies may, upon application through the local board of health or the attending physician, receive the Pasteur treatment at an expense of twenty-five dollars. With the apparent tendency of the disease to spread throughout the State more stringent and effective laws should be enacted. We believe the law in operation in New York State, which gives full power to the State Bureau of Animal Industry to deal with the disease, is an improvement on the law of our State, in which the responsibility is divided between local governing bodies and local boards of health.

Glanders.—The major portion of cases of glanders which are reported each year occur in Essex and Hudson counties. The nearness of these counties to New York and Brooklyn, the large number of horses which pass between these points, and the fact that the disease constantly exists leads to many exposures to the infection. Every effort has been made to discover and condemn all animals having glanders in these counties, but until provision is made or a constant inspection of all horses crossing the ferries between New York and Jersey, the disease will continue to be a cause of financial loss to horse owners. The total number of cases reported during the year was 106, and the distribution of the cases was as follows: Bergen county, 2 cases; Essex county, 65 cases; Hudson county, 22 cases; Mercer county, 2 cases; Middlesex county, 5 cases; Monmouth county, 2 cases; Morris county, 1 case; Passaic county, 3 cases; Somerset county, 1 case; Sussex county, 1 case, and Union county, 2 cases.

Several cases of hog cholera were reported in Salem county, and a veterinarian representing the State Board of Health met with the farmers in that section directing them as to the use of protective serum for the protection of well animals and as to proper isolation of sick animals. Cases of mange were reported in Essex, Morris and Sussex counties, the total number of cases being fourteen. Of this number ten cases occurred in Sussex county. The action of the Board in dealing with this disease consisted in the instruction of owners as to the proper treatment of diseased animals, and in directing local boards of health to require the isolation of infected animals and the disinfection of infected premises. A review of the cases of contagious diseases of animals occurring in our State during the past year shows that intelligent supervision of these cases, coupled with a desire on the part of animal owners to adopt preventive measures, is resulting in lessening the total number of cases.

EXAMINATION OF HEALTH OFFICERS AND SANITARY INSPECTORS.

There is no problem connected with the administration of health laws having a more direct bearing on the establishment and maintenance of healthful conditions in our State than that of the selection of efficient health officers and sanitary inspectors. The laws

of our State creating boards of health in the various sanitary districts make the appointment by local boards of health of health officers and inspectors obligatory. From the passage of the act of 1887 containing this requirement to the adoption of the law requiring all health officers and sanitary inspectors to secure a license from the State Board of Health, these employes of local boards of health were, in a majority of instances, chosen because they represented the dominating political party, and the appointment was made as a reward for political service without regard to the training or suitability of the person for the work.

There are in New Jersey 474 sanitary districts which are required by law to have organized boards of health. Of this number at least 250 are townships. In these townships the members of the township committee constitute the boards of health. The majority of the townships are located in rural districts, and the persons selected to serve as members of the township committee are chosen on account of knowledge of the management of the business affairs of the township, and the reliance of the voters of the township upon their honesty and good judgment. No qualifications as to the administration of the health laws of the State and the protection of the lives and health of the inhabitants is considered. That unqualified persons should be entrusted to deal with the many great and serious problems affecting health is illogical and unreasonable. Health officers and inspectors selected by many boards of health have of necessity been untrained men who were totally unfit for such service.

What has been said of township committees acting as local boards of health is not intended in any way as a reflection upon the members, as many of the township boards of health have been active and efficient and co-operated with the State Board of Health in dealing with epidemics and the abatement of nuisances. With the intention of securing trained and qualified men to act as health officers the law of 1903 was passed. In the months of June and December of each year examinations have been held, and during the period from June, 1903, to October, 1911, 536 applicants have been examined, of which number 88 secured licenses to act as health officers, 110 as sanitary inspectors of the first class, 8 as sanitary inspectors of the second class, and 7 as sanitary inspectors of the third class. The third class inspectors are only eligible for appointment in townships. In addition to the above men-

tioned, 7 meat inspectors and 89 plumbing inspectors have been examined, and licenses have been issued to 4 meat inspectors and 55 plumbing inspectors. It has been the plan of the examining board to grade the examinations so that the applicant for license as health officer in the larger cities should be more fully tested as to knowledge and efficiency than those desiring to serve as inspectors in rural districts. When comparison is made of the number of licenses issued with the number of boards of health in the State it would appear that only a small number of districts were provided with licensed health officers and inspectors. This, however, is not the fact, as the act requiring the licensing of health officers and sanitary inspectors provided for the retention of all health officers and inspectors serving at the time of the passage of the act without requiring the taking of examinations. Many inspectors are now serving local boards of health who were exempted from examination by the law.

The applicants for licenses were for several years made up of men from all walks of life, many of them having the impression that no knowledge was required and that the examination was merely a matter of form. After several examinations had been held the rejection of such large numbers of candidates led to an entirely different view, and gradually the majority of applicants were persons who were graduates of high schools, colleges or technical schools. While the demand for trained inspectors is not as great as it should be and the pay for the service of such men is for the most part entirely inadequate, we believe that by requiring the licensing of health officers the standards of efficiency have been raised and the public educated to such a degree as to demand of local boards of health the appointment of men who are qualified to fill the positions for which they are selected. A list of persons who have successfully passed the examinations provided for in the act of 1903 will be found in the later pages of the report.

Vital Statistics

POPULATION.

The figures presented in the following table, showing the population of New Jersey, are taken from the official reports of the Bureau of the Census, Washington, D. C. This table also shows the population taken from the Government and State reports showing the official census by five year periods from 1880 to 1910, inclusive.

The tables found in the report for the present year will therefore show the marriage, birth and death rates figured according to the official reports showing the correct population.

TABLE 1.—POPULATION OF THE COUNTIES OF NEW JERSEY AND OF MUNICIPALITIES HAVING 5,000 INHABITANTS OR OVER FOR THE CENSUS YEARS 1880, 1885, 1890, 1900, 1905 AND 1910.

	1880.	1885.	1890.	1895.	1900.	1905.	1910.
Atlantic County.....	18,704	22,356	28,536	34,750	46,402	59,862	71,894
Atlantic City.....	5,477	7,942	12,855	18,055	27,836	37,593	46,150
Bergen County.....	36,786	39,890	47,226	65,251	78,441	100,063	128,002
Englewood.....					6,253	7,922	9,924
Garfield.....						5,092	10,213
Hackensack.....			6,004	7,282	9,443	11,098	14,050
Rutherford.....						5,218	7,045
Burlington County.....	55,403	57,538	58,528	59,117	58,241	62,012	66,593
Bordentown.....	5,334	5,857	5,090	5,176	4,110	4,073	4,250
Burlington.....	7,287	7,696	7,954	7,844	7,392	8,038	8,386
Camden County.....	62,942	76,685	87,887	100,104	107,645	121,555	142,029
Camden City.....	41,650	52,854	58,313	63,467	75,938	83,963	94,538
Glocester City.....	5,347	5,966	6,564	6,225	6,840	8,055	9,462
Cape May County.....	9,765	10,744	11,268	12,855	13,201	17,390	19,745
Cumberland County.....	37,687	41,382	45,488	49,815	51,193	52,110	55,133
Bridgeton.....	5,722	10,065	11,224	13,292	13,913	13,624	14,209
Milville.....	7,660	8,824	10,002	10,466	10,583	11,884	12,451
Essex County.....	189,929	213,764	256,098	312,000	359,053	409,928	512,886
Bloomfield.....			7,708	8,098	9,698	11,668	15,070
East Orange.....			13,282	17,927	21,566	25,175	34,371
Irvington.....				3,388	5,256	7,130	11,877
Montclair.....						13,902	21,549
Newark.....		152,888	181,830	215,806	246,070	283,289	347,469
Orange.....	136,508	15,291	18,844	22,792	24,141	26,101	29,630
West Orange.....	13,207		4,358	6,889	8,854	7,312	10,960
Glocester County.....	25,886	27,603	28,649	31,191	31,905	34,471	37,963
Hudson County.....	187,944	240,342	275,126	328,680	386,048	449,879	537,231
Bayonne.....	9,572	18,063	19,033	19,856	32,722	42,262	55,545
Harrison.....	6,898	6,896	8,338	9,672	10,596	12,828	14,488
Hoboken.....	30,999	37,721	43,648	54,083	65,408	70,824	80,824
Jersey City.....	120,722	133,513	163,003	182,713	206,433	232,699	267,779
Kearny.....				10,487	10,896	13,601	18,659
Town of Union.....		8,908	10,613	13,396	15,187	17,005	21,623
West Hoboken.....			11,685	18,296	23,094	29,082	35,403
Hunterdon County.....					5,287	7,106	13,560
Lambertville.....	38,570	37,420	35,355	35,334	34,507	33,258	33,569
Mercer County.....						5,016	4,657
Chambersburg.....	58,061	66,745	79,978	85,386	95,365	110,516	125,657
Princeton.....	5,437	8,542				6,029	5,148
Trenton.....	39,910	41,886	57,458	62,518	73,307	84,180	96,815
Middlesex County.....	52,286	56,180	61,754	70,058	79,762	97,036	114,426
New Brunswick.....	17,166	18,258	19,008	19,910	20,006	25,133	23,388
Perth Amboy.....			9,512	13,030	17,699	23,895	32,321
South Amboy.....			4,390	5,971	6,349	6,258	7,007
Monmouth County.....	35,598	62,324	69,128	75,543	82,067	87,919	94,734
Asbury Park.....							10,150
Long Branch.....		5,140	7,231	7,983	8,872	12,183	13,988
Red Bank.....			4,145	4,888	5,428	6,263	7,308
Morris County.....	50,861	50,673	54,101	59,536	65,156	67,934	74,704
Dover.....						6,353	7,468
Morristown.....	6,837	8,790	8,156	10,290	11,267	12,146	12,507
Ocean County.....	14,455	15,386	15,974	18,739	19,747	20,888	21,318
Passaic County.....	68,860	83,374	106,046	133,227	155,202	175,888	215,902
Passaic City.....	6,332		13,028	17,894	27,777	37,837	54,773
Paterson.....	51,031		73,947	97,344	105,171	111,529	125,600
Salem County.....	24,579	25,373	25,151	26,084	25,330	26,287	26,999
Salem City.....	5,056	5,316	5,516	6,337	5,811	6,443	6,614
Somerset County.....	27,162	27,425	28,311	30,447	32,948	36,270	38,820
North Plainfield.....				4,245	5,099	5,616	6,117
Sussex County.....	23,589	22,401	22,292	22,866	24,134	23,325	26,781
Union County.....	55,571	61,839	72,467	85,049	99,333	117,217	140,197
Elizabeth.....	28,229	32,119	37,764	43,834	52,130	60,509	73,409
Plainfield.....	8,125	8,913	11,267	13,629	15,969	18,468	20,530
Railway.....	6,455	6,861	7,105	4,450	7,953	8,649	9,337
Summit.....					5,845	7,500	8,785
Westfield.....						5,265	6,420
Warren County.....	36,589	37,737	36,533	37,233	37,781	40,403	43,187
Phillipsburg.....	7,181	8,057	8,644	9,081	10,652	13,432	18,903

COMPARATIVE DEATH RATE OF THE WHITE AND COLORED INHABITANTS IN NEW JERSEY.

The following table shows the estimated population, the total death-rate, and the death-rate among the white, and the death-rate among the colored inhabitants in New Jersey. It covers a period of ten years and a marked difference is shown in the death rates:

TABLE 2.—SHOWING NUMBER OF WHITE AND COLORED INHABITANTS IN NEW JERSEY, WITH DEATH-RATES PER 1,000 POPULATION, FOR TEN YEARS, 1901-1910.

YEARS.	Estimated population (total).	Estimated population (colored).	Total death-rate.	Death-rate, white.	Death-rate, colored.
1901.....	1,833,669	72,011	16.48	16.65	21.79
1902.....	1,925,781	74,178	15.91	17.33	21.00
1903.....	2,016,797	76,345	15.87	15.44	24.32
1904.....	2,058,909	78,512	17.14	16.91	22.95
1905.....	2,144,143	79,485	15.79	15.57	21.59
1906.....	2,196,238	80,458	16.24	16.02	22.09
1907.....	2,248,331	81,431	16.63	16.42	22.47
1908.....	2,300,427	82,404	15.47	15.23	22.04
1909.....	2,352,522	83,377	15.46	15.29	20.09
1910.....	2,537,167	89,760	15.57	15.41	19.83

BIRTHS.

The following table shows the number of births, marriages and deaths in New Jersey, for the thirty-two years ending December 31st, 1910. It is interesting to note that during the past ten years there has been a gradual increase in the birth-rate, and under the present laws in regard to reporting births there is no doubt that the time is not far distant when practically all of the births that take place in New Jersey will be reported.

It is the experience of this department that most of the persons who fail to report births do so through ignorance of the law, and therefore rather than carry on a campaign of prosecutions in such cases it has been the policy to try and educate those negligent in making reports, to the importance of filing a record of every birth. This work has been found difficult because of the employment of midwives among the foreign population, many of whom are unable to read or write the English language, and in such cases we have recommended to the local registrars that they make a periodical canvass of the foreign colonies in their sanitary district, and endeavor to have all unreported births placed on file.

TABLE 3.—SHOWING POPULATION, NUMBER OF BIRTHS REPORTED, NUMBER OF MARRIAGES AND NUMBER OF DEATHS IN NEW JERSEY, WITH BIRTH-RATES, MARRIAGE-RATES AND DEATH-RATES FOR THE THIRTY-TWO YEARS ENDING DECEMBER 31, 1910.

YEAR.	Population.*	BIRTHS.		MARRIAGES.		DEATHS.	
		Number of births reported.	Birth-rate per 1,000 population.	Number of marriages.	Persons married per 1,000 population.	Number of deaths.	Death-rate per 1,000 population.
1879.....	1,020,584	23,116	22.65	7,096	13.91	20,440	20.03
1880.....	1,130,892	23,680	20.94	7,963	14.08	18,967	16.77
1881.....	1,160,475	23,484	20.24	8,109	13.98	20,812	17.94
1882.....	1,189,688	23,168	19.42	8,557	14.96	23,859	21.82
1883.....	1,209,048	24,430	20.21	9,166	15.16	26,310	19.28
1884.....	1,248,324	25,263	20.20	8,968	14.37	21,716	17.40
1885.....	1,278,033	24,077	18.84	8,969	14.07	23,807	18.63
1886.....	1,310,431	23,410	17.84	12,851	18.55	22,734	17.35
1887.....	1,342,829	27,340	20.36	15,416	22.96	24,531	18.12
1888.....	1,375,327	28,074	20.41	16,025	23.31	27,173	19.73
1889.....	1,407,623	29,099	20.67	15,726	22.24	26,543	18.86
1890.....	1,441,917	30,108	20.89	15,564	21.60	28,530	19.89
1891.....	1,478,734	28,882	19.53	15,305	20.70	28,840	19.50
1892.....	1,511,653	30,627	20.26	15,082	21.28	32,653	21.62
1893.....	1,539,799	32,285	20.98	17,173	22.33	30,596	19.88
1894.....	1,578,373	33,662	21.33	16,245	20.58	30,004	19.09
1895.....	1,622,942	31,742	19.57	15,873	19.88	30,634	18.81
1896.....	1,718,543	31,307	18.16	18,171	21.38	30,767	17.90
1897.....	1,764,144	31,595	17.91	18,171	20.60	29,322	16.90
1898.....	1,810,008	32,515	17.96	18,213	14.59	27,337	15.11
1899.....	1,850,872	29,719	15.84	13,336	14.37	30,990	16.70
1900.....	1,883,689	32,270	17.13	14,611	15.51	31,474	16.62
1901.....	1,925,781	34,812	18.08	16,539	17.18	31,739	16.48
1902.....	1,967,893	35,116	17.84	18,150	18.45	31,819	16.19
1903.....	2,016,797	37,242	18.47	19,512	19.38	33,864	15.79
1904.....	2,038,909	37,551	18.32	18,919	19.19	33,670	16.34
1905.....	2,144,143	39,690	18.31	21,580	19.65	37,408	16.63
1906.....	2,196,238	42,677	19.43	23,469	21.04	35,597	15.47
1907.....	2,248,331	44,651	19.86	26,155	22.74	36,359	15.46
1908.....	2,300,437	47,405	20.61	29,724	25.27	38,494	15.57
1909.....	2,352,522	47,508	20.19	27,912	22.00		
1910.....	2,387,167	53,942	21.56	27,912	22.00		

* Estimated except for census years.

NOTE.—The reports of births are not as complete as are those for marriages and deaths, hence the above table does not represent with accuracy the relation between birth-rates and death-rates.

NOTE.—The large number of marriages reported during the years 1886-1897 was due to the unrestricted authority contained in the laws for the performance of the marriage ceremony in the case of non-residents, and the marked decrease in the number of marriages which occurred in 1893 was directly consequent upon the enactment of the law requiring a license in cases where both parties are non-residents of the State, and again in 1910, when the law became operative requiring that all persons marrying in New Jersey shall first secure a license.

MARRIAGES.

It was expected that the marriage license law would be the means of decreasing the number of marriages in this State, and the figures showing the marriages for 1910 are 1,812 less than the preceding year. It thus appears that practically 2,000 marriages which would have taken place in New Jersey were prevented because of the marriage license law. Of course it is difficult to approximate how many of these marriages were of the runaway sort, but a fair estimate would place the figures well up into the hundreds, and there is no better argument than that shown by these figures to uphold the license law.

TABLE 4.—SHOWING NUMBER OF MARRIAGES RECORDED IN NEW JERSEY FOR THE THIRTY-TWO YEARS ENDING DECEMBER 31, 1910.

YEAR.	1879.	1880.	1881.	1882.	1883.	1884.	1885.	1886.	1887.	1888.
Marriages in New Jersey.....	7,096	7,963	8,109	8,827	9,166	8,963	8,969	12,351	15,416	16,025
Persons married per 1,000 population.....	13.91	14.08	13.98	14.86	15.16	15.37	14.07	18.85	22.96	23.31

YEAR.	1889.	1890.	1891.	1892.	1893.	1894.	1895.	1896.	1897.	1898.
Marriages in New Jersey.....	15,726	15,564	15,306	16,082	17,173	16,245	15,873	18,370	18,171	18,213
Persons married per 1,000 population.....	22.34	21.60	20.70	21.28	22.33	20.59	18.98	21.38	20.60	14.50

YEAR.	1899.	1900.	1901.	1902.	1903.	1904.	1905.	1906.	1907.	1908.	1909.	1910.
Marriages in New Jersey.....	13,336	14,611	16,539	18,150	19,512	18,919	20,572	21,580	23,649	26,155	29,724	27,912
Persons married per 1,000 population.....	15.40	15.51	17.23	18.45	19.35	18.38	19.19	19.65	21.04	22.74	25.27	22.00

DEATHS.

There has been practically very little change in the death-rate of New Jersey for the past three years. The total number of deaths for the year ending December 31st, 1910, was 39,494, and the death-rate per 1,000 inhabitants, 15.57.

The statistical data now contained on the death certificates filed in this department is more complete than ever before, especially in reference to the occupation of the deceased, which permits a classification of mortality by occupations, which will be found in another portion of this report.

No doubt the time is not far distant when uniform tables in reference to tabulating deaths will be adopted by all registration states and cities, and after such data has been compiled for a short time the comparative mortality from various diseases in all parts of our nation will be available in like form.

CHART SHOWING DEATH-RATES IN NEW JERSEY, PER 1,000 INHABITANTS FOR THIRTY-TWO YEARS, 1879-1910.

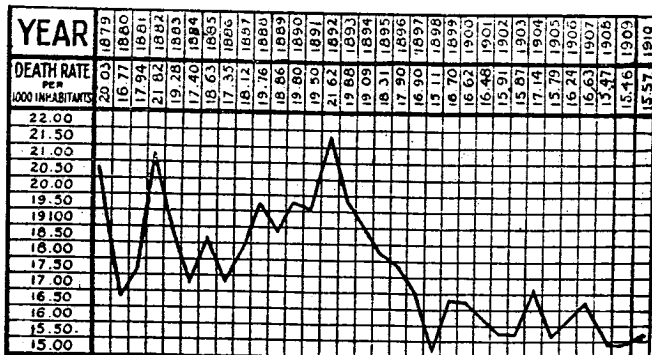


TABLE 5.—DEATHS IN NEW JERSEY, BY AGE PERIODS, FOR THE YEAR ENDING DECEMBER 31, 1910.

AGE PERIODS.	Number of deaths.
Under 1 mo.	2887
Under 1 year.	3465
1 to 5	3296
5 to 10	903
10 to 15	584
15 to 20	869
20 to 25	1286
25 to 30	1423
30 to 35	1621
35 to 40	1915
40 to 45	1810
45 to 50	1806
50 to 55	2045
55 to 60	2023
60 to 70	4787
70 to 80	4338
80 to 90	2132
Over 90.	288
Not stated.	4
Total number of deaths.	39,494

TABLE 6.—SHOWING NUMBER OF DEATHS IN NEW JERSEY FROM CERTAIN CLASSIFIED DISEASES FOR THIRTY-TWO YEARS, 1879-1910.

DISEASES.	1879.	1880.	1881.	1882.	1883.	1884.	1885.	1886.	1887.	1888.
Acute lung diseases.....	2,160	1,988	2,208	2,752	2,756	2,174	2,566	2,300	2,557	2,922
Consumption, M.....	2,788	2,714	2,989	1,686	1,537	1,537	1,673	1,631	1,310	1,733
Consumption, F.....	.....	.....	.....	1,779	1,594	1,658	1,647	1,534	1,743	1,685
Diarrhoeal diseases of children.....	1,849	2,166	2,305	2,792	2,656	2,462	2,845	2,664	2,694	3,508
Adult brain and spinal diseases.....	1,314	1,347	1,502	1,521	1,562	1,664	1,895	1,932	1,962	2,095
Brain and nervous diseases of children.....	1,647	1,638	1,642	1,999	1,683	1,598	1,791	1,774	1,886	1,971
Diseases of the heart and circulation.....	972	982	1,213	1,181	1,235	1,324	1,503	1,506	1,530	1,691
Diphtheria and croup.....	1,100	873	1,128	1,472	1,146	1,027	1,496	1,303	1,327	2,036
Digestive and intestinal diseases.....	1,041	1,005	1,080	740	923	1,075	1,140	1,213	1,242	1,476
Renal and cystic diseases.....	558	516	608	765	759	892	939	926	873	1,020
Violent deaths.....	.....	.....	.....	793	907	.....	857	997	1,051	1,320
Cancer.....	378	425	451	402	461	484	495	546	574	612
Typhoid fever.....	324	373	374	384	564	640	642	545	522	620
Scarlet fever.....	627	573	499	1,306	833	547	646	222	255	374
Puerperal.....	194	244	303	244	198	221	268	357	233	371
Whooping cough.....	277	130	110	253	189	116	181	274	181	261
Malarial fever.....	268	293	431	379	290	230	290	243	217	264
Measles.....	77	87	70	206	131	189	135	88	296	74
Erysipelas.....	137	126	124	94	90	80	74	96	138	.....
Acute rheumatism.....	76	64	89	52	38	62	36	68	132	142
Small-pox.....	.....	15	254	367	54	7	2	4	5	5
Total deaths per year.....	15,797	15,542	17,539	25,910	23,310	21,716	23,807	22,734	24,331	27,173

DISEASES.	1889.	1890.	1891.	1892.	1893.	1894.	1895.	1896.	1897.	1898.
Acute lung diseases.....	2,802	3,804	4,101	3,187	3,974	4,183	4,597	4,146	4,039	3,414
Consumption, M.....	1,722	1,943	1,849	1,851	1,790	1,831	1,860	1,756	1,795	1,722
Consumption, F.....	1,677	1,767	1,607	1,724	1,637	1,602	1,682	1,572	1,472	1,453
Diarrhoeal diseases of children.....	3,377	3,527	3,191	4,043	3,981	3,393	3,716	3,807	3,450	2,958
Adult brain and spinal diseases.....	1,991	2,308	2,333	2,457	2,611	2,413	2,626	2,610	2,582	2,700
Brain and nervous diseases of children.....	1,923	2,032	2,029	2,242	2,072	2,083	1,925	2,018	1,809	1,642
Diseases of the heart and circulation.....	1,786	1,945	1,960	2,183	2,179	2,112	2,268	2,412	2,475	2,276
Diphtheria and croup.....	1,574	1,575	1,737	1,776	1,677	1,294	1,464	1,587	1,382	950
Digestive and intestinal diseases.....	1,450	1,321	1,573	1,625	1,753	1,565	1,589	1,622	1,572	1,484
Renal and cystic diseases.....	1,056	1,149	1,200	1,444	1,441	1,447	1,523	1,584	1,732	1,694
Violent deaths.....	1,077	1,235	1,365	1,427	1,538	1,500	1,469	1,426	1,685	1,451
Cancer.....	579	640	642	688	723	731	770	811	857	852
Typhoid fever.....	724	782	695	625	506	485	568	577	478	450
Scarlet fever.....	533	299	288	1,008	445	272	264	133	203	201
Puerperal.....	254	250	296	282	282	293	294	283	278	264
Whooping cough.....	278	371	299	163	237	328	272	275	321	155
Malarial fever.....	203	195	196	138	148	162	144	119	132	42
Measles.....	117	174	250	197	73	257	65	330	156	195
Erysipelas.....	114	81	85	94	74	97	74	69	68	38
Acute rheumatism.....	117	106	76	100	102	91	82	39	69	55
Small-pox.....	3	.....	.....	38	43	11	23	2	.....	.....
Total deaths per year.....	25,543	28,530	28,810	32,685	30,596	30,004	30,634	30,767	29,822	27,337

TABLE 6.—SHOWING NUMBER OF DEATHS IN NEW JERSEY FROM CERTAIN CLASSIFIED DISEASES FOR THIRTY-TWO YEARS, 1879-1910—Continued.

DISEASES.	1899.	1900.	1901.	1902.	1903.	1904.	1905.	1906.	1907.	1908.	1909.	1910.
Acute lung diseases.....	4,322	4,795	4,188	4,236	4,265	5,309	4,445	5,230	5,515	4,757	5,363	5,330
Consumption.....	1,936	1,787	3,257	3,015	3,880	3,670	3,567	3,654	3,749	3,616	3,608	3,577
Consumption, F.....	1,628	1,727	2,589	2,421	2,628	3,486	2,764	3,117	3,307	2,773	3,694	3,156
Pneumonia.....												
Diarrhoeal diseases of children.....	3,568	3,010	1,895	1,878	1,603	2,423	2,290	2,307	2,492	2,575	2,369	2,929
Adult brain and spinal diseases.....	2,842	2,946	2,836	2,787	2,880	3,053	3,942	3,219	3,402	3,246	3,245	3,679
Brain and nervous diseases of children.....	1,950	1,767	2,012	1,806	1,735	1,966	2,095	1,717	1,688	1,489	1,452	815
Diseases of the heart and circulation.....	2,731	2,832	2,772	3,066	3,166	3,301	3,316	3,460	3,911	3,841	4,023	4,438
Diphtheria and croup.....	777	927	683	658	748	919	699	673	632	535	610	728
Digestive and intestinal diseases.....	1,566	1,700	2,221	2,042	2,000	2,279	2,183	2,245	2,459	2,305	2,258	2,645
Renal and cystic diseases.....	1,925	2,072	2,043	2,021	2,160	2,261	2,487	2,543	2,803	2,640	2,797	3,039
Violent deaths.....	1,724	1,724	2,158	1,775	2,010	2,206	2,162	2,318	2,447	2,366	2,479	2,528
Cancer.....	946	921	1,042	1,031	1,132	1,125	1,282	1,339	1,466	1,531	1,663	1,838
Typhoid fever.....	486	356	352	428	388	384	360	461	367	301	332	329
Scarlet fever.....	187	220	179	217	299	416	164	193	286	396	338	222
Puerperal.....	267	288	207	225	279	221	238	322	289	329	311	377
Whooping cough.....	282	396	137	281	245	124	186	388	245	237	294	380
Malarial fever.....	96	84	50	36	40	47	21	36	29	30	25	25
Measles.....	96	231	77	204	41	180	98	203	144	189	242	186
Erysipelas.....	85	111	71	69	86	113	90	94	106	96	57	112
Acute rheumatism.....	73	73	116	94	74	66	101	109	87	97	68	54
Small-pox.....		5	142	432	17	24	1	1			2	
Total deaths per year.....	30,999	31,474	31,739	31,319	31,820	35,298	33,864	35,670	37,408	35,597	36,359	30,494

TABLE 7.—DEATHS IN NEW JERSEY, PER 10,000 POPULATION, FROM CERTAIN CLASSIFIED CAUSES, FOR THIRTY-TWO YEARS.

CAUSES OF DEATH.	1879.	1880.	1881.	1882.	1883.	1884.	1885.	1886.	1887.	1888.
Acute lung diseases.....	21.16	17.57	17.30	23.13	22.79	17.41	20.07	17.55	19.04	21.74
Consumption.....	27.31	23.99	25.76	29.21	25.81	25.75	23.97	24.25	27.20	24.41
Diarrhoeal diseases of children.....	18.11	19.15	19.43	15.06	21.96	19.72	22.26	20.32	20.06	25.30
Adult brain and spinal diseases.....	12.87	11.91	12.94	12.78	12.91	13.38	14.82	14.74	13.64	15.23
Brain and nervous diseases of children.....	16.13	14.48	14.15	16.80	13.92	12.80	14.01	13.53	14.04	14.33
Diseases of heart and circulation.....	9.52	8.68	10.45	9.92	10.21	10.60	11.75	11.49	11.39	12.29
Diphtheria and croup.....	10.86	7.71	9.72	12.57	9.47	8.21	11.70	9.94	11.37	14.80
Digestive and intestinal diseases.....	10.20	8.58	9.30	6.22	7.63	8.62	8.91	9.25	9.24	10.75
Renal and cystic diseases.....	5.46	4.36	5.24	6.43	6.27	7.14	7.34	7.06	6.50	7.41
Violent deaths.....		6.00	7.50							
Cancer.....	3.70	3.75	3.83	3.37	3.81	3.37	3.89	4.15	4.21	4.45
Typhoid fever.....	3.17	3.29	4.94	7.43	4.66	5.12	5.02	4.15	3.83	4.50
Scarlet fever.....	6.14	5.06	4.20	10.09	7.63	4.28	3.05	1.69	1.89	4.17
Puerperal.....	1.90	2.15	2.61	2.05	1.63	1.77	2.09	1.96	1.95	1.97
Whooping cough.....	2.71	1.14	1.02	2.12	1.56	.92	4.1	2.09	1.94	1.17
Malarial fever.....	2.62	2.59	3.74	3.10	2.39	1.84	1.62	1.85	1.61	1.91
Measles.....	.75	.76	.80	.78	1.08	1.51	1.05	.67	2.20	.53
Erysipelas.....	1.34	.96	1.06	.79	.74	.64	.67	.60	.71	.83
Acute rheumatism.....	.74	.56	.76	.43	.27	.49	.28	.51	.98	1.0
Small-pox.....		.13	2.15	3.08	.44	.56	.01	.03	.03	.03

TABLE 7.—DEATHS IN NEW JERSEY, PER 10,000 POPULATION, FROM CERTAIN CLASSIFIED CAUSES, FOR THIRTY-TWO YEARS—Continued.

CAUSES OF DEATH.	1889.	1890.	1891.	1892.	1893.	1894.	1895.	1896.	1897.	1898.	1899.	1900.
Acute lung diseases.....	20.83	26.39	27.73	34.31	25.82	26.50	27.49	24.12	22.89	18.86		
Consumption.....	24.50	24.46	23.37	33.64	22.23	21.77	21.17	19.33	18.94	17.81		
Diarrhoeal diseases of children.....	23.99	24.47	21.57	26.74	23.87	24.66	22.39	22.13	19.55	16.34		
Adult brain and spinal diseases.....	14.14	16.01	15.77	16.25	16.96	15.28	15.69	15.18	14.63	14.91		
Brain and nervous diseases of children.....	13.66	14.10	13.72	14.83	13.40	12.11	11.59	11.74	10.25	9.06		
Diseases of heart and circulation.....	12.68	18.49	13.25	14.41	14.16	12.74	13.55	14.08	14.52	12.62		
Diphtheria and croup.....	11.18	10.92	11.74	11.74	10.89	8.19	8.75	10.22	7.83	5.24		
Digestive and intestinal diseases.....	10.30	10.55	10.63	10.74	11.39	9.92	9.49	9.43	8.91	8.19		
Renal and cystic diseases.....	7.50	7.97	8.11	8.53	8.36	9.16	9.10	9.21	9.21	9.35		
Violent deaths.....	7.65	8.57	9.23	9.48	9.99	9.50	8.78	8.29	9.55	8.01		
Cancer.....	4.11	4.41	4.34	4.55	4.69	4.60	4.60	4.71	4.83	4.70		
Typhoid fever.....	5.14	5.42	4.69	4.15	3.28	3.07	3.39	3.35	2.70	2.48		
Scarlet fever.....	3.78	1.45	1.94	6.66	2.89	1.72	1.57	1.06	1.15	1.11		
Puerperal.....	1.80	1.73	2.00	1.86	1.83	1.85	1.75	1.64	1.57	1.43		
Whooping cough.....	1.97	2.57	2.07	1.07	1.54	2.07	1.62	1.60	1.81	.85		
Malarial fever.....	1.44	1.35	1.21	1.30	.96	1.02	.85	1.69	1.74	.45		
Measles.....	.83	1.20	1.69	1.30	.47	1.62	.56	2.28	.88	1.47		
Erysipelas.....	.80	.56	.57	.62	.48	.61	.41	.49	.38	.32		
Acute rheumatism.....	.53	.73	.51	.66	.66	.57	.49	.34	.39	.31		
Small-pox.....	.02			.25	.27	.06	.13	.01				

CAUSES OF DEATH.	1899.	1900.	1901.	1902.	1903.	1904.	1905.	1906.	1907.	1908.	1909.	1910.
Acute lung diseases.....	23.29	25.21	23.27	23.18	22.73	27.78	20.75	22.81	24.50	20.81	22.80	21.07
Consumption.....	19.31	18.48	16.91	15.82	16.76	17.83	16.78	16.64	16.67	15.72	15.34	15.26
Diarrhoeal diseases of children.....	19.23	15.88	9.84	9.54	7.95	11.77	10.68	10.91	11.08	11.19	10.07	11.54
Adult brain and spinal diseases.....	15.31	15.49	16.20	16.40	16.60	16.51	13.72	14.62	15.13	14.11	13.79	14.50
Brain and nervous diseases of children.....	10.53	9.29	11.26	9.72	9.95	10.68	9.77	7.82	7.51	6.47	6.17	3.22
Diseases of heart and circulation.....	14.72	14.99	14.37	15.58	15.70	16.03	15.47	15.75	17.39	16.70	17.10	17.49
Diphtheria and croup.....	4.19	4.87	3.53	3.74	3.71	4.46	3.26	3.06	2.81	2.33	2.59	2.87
Pneumonia*.....			13.18	12.90	13.03	16.93	12.93	14.19	14.76	10.65	13.15	12.44
Digestive and intestinal diseases.....	8.38	9.47	11.42	10.38	10.21	11.03	10.18	10.22	10.94	10.02	9.60	10.43
Renal and cystic diseases.....	10.37	10.50	10.45	10.27	10.71	11.47	11.68	11.58	12.47	11.48	11.89	11.96
Violent deaths.....	9.29	9.00	11.20	9.02	9.97	11.56	10.06	10.53	10.88	10.29	10.64	9.96
Cancer.....	5.10	4.81	5.42	5.24	5.61	5.46	5.98	6.32	6.32	6.67	7.07	7.24
Typhoid fever.....	2.62	1.87	1.83	2.17	1.92	1.87	1.68	1.86	2.06	1.60	1.25	1.55
Scarlet fever.....	1.01	1.16	.98	1.10	1.48	2.02	.76	.88	1.27	1.72	1.44	.90
Puerperal.....	1.44	1.51	1.70	1.14	1.38	1.07	1.11	1.47	1.29	1.43	1.32	1.49
Whooping cough.....	1.31	1.61	.82	1.43	1.21	.90	1.33	1.77	1.69	1.03	1.21	1.53
Malarial fever.....	.52	.40	.26	.18	.20	.23	.10	.16	.13	.13	.11	.10
Measles.....	.52	1.21	.40	1.04	.20	.87	.46	.92	.64	.32	1.03	.73
Erysipelas.....	.47	.58	.37	.35	.43	.50	.42	.43	.47	.42	.24	.44
Acute rheumatism.....	.39	.38	.40	.43	.35	.33	.47	.50	.39	.42	.29	.21
Small-pox.....			.74	2.20	.07	.01					.01	

* Deaths under this classification were not separately recorded until 1901.

TABLE 8.—SHOWING DEATH-RATE, PER 1,000 POPULATION, IN THE CITIES OF NEW JERSEY HAVING OVER 5,000 POPULATION, FOR THIRTY-TWO YEARS, 1879-1910.

NAMES OF CITIES.	1879.	1880.	1881.	1882.	1883.	1884.	1885.	1886.	1887.	1888.
Atlantic City*			24.46	31.76	26.29	32.50	23.54	21.08	27.20	29.34
Bordentown	16.82	16.89	16.31	16.88	16.87	19.68	15.88	15.88	18.32	16.36
Burlington	21.10	15.61	18.37	22.94	18.51	18.93	24.45	21.46	17.30	21.46
Camden	18.88	19.27	22.90	21.55	20.01	22.37	18.30	19.27	19.49	22.79
Gloucester	14.10	15.70	20.19	18.32	21.88	21.69	15.42	16.59	22.06	23.13
Bridgeton	16.72	17.75	19.72	23.85	15.48	18.69	17.78	11.92	16.19	17.69
Millville	20.22	22.71	22.71	17.75	18.27	18.54	16.89	15.75	16.55	21.65
Newark	25.28	18.71	21.12	28.06	25.49	24.70	24.28	23.94	24.40	27.02
Orange	19.88	16.33	18.02	23.44	21.81	22.03	19.70	19.85	21.11	24.49
Bayonne	26.73	15.04	16.43	26.89	20.91	22.19	18.58	23.78	23.68	26.38
Harrison	23.41	20.00	24.61	22.18	32.08	28.96	26.01	26.74	28.50	
Hoboken	27.01	28.71	25.82	31.42	25.90	22.19	22.35	24.02	24.28	28.13
Jersey City	28.04	20.36	23.61	30.12	25.74	25.25	22.42	22.02	24.01	25.98
Town of Union		20.04	18.80	36.93	35.73	23.42	25.84	22.03	22.74	24.77
Trenton	26.08	20.68	18.89	20.53	20.79	21.13	17.48	15.12	17.80	19.51
New Brunswick	19.50	15.66	18.81	22.78	26.79	28.18	18.40	19.06	19.17	19.28
Perth Amboy						19.17	23.77	27.41		
Long Branch*						22.84				
Morrisstown	16.40	18.71	15.94	17.70	28.96	20.77	14.61	13.70	13.88	18.95
Passaic	21.78	19.44	22.82	20.82	23.58	16.64	21.02	22.82	24.38	
Paterson	23.61	23.07	22.75	29.61	27.72	28.38	20.29	17.78	22.83	27.17
Salem	15.93	14.67	15.56	23.14	15.43	19.22	22.30	16.13	18.85	
Elizabeth	18.30	15.58	19.21	21.68	24.80	20.38	21.70	18.90	22.21	23.28
Plainfield	18.01	12.06	16.00	15.58	19.81	16.25	18.32	17.17	17.17	22.31
Rahway	24.31	17.97	16.11	28.35	20.29	17.19	15.60	14.58	16.91	20.41
Phillipsburg	14.08	17.54	15.87	28.53	20.46	18.10	18.37	14.40	10.24	13.28

NAMES OF CITIES.	1889.	1890.	1891.	1892.	1893.	1894.	1895.	1896.	1897.	1898.
Atlantic City*	26.93	21.01	20.46	20.19	16.47	18.38	19.20	18.78	20.45	16.89
Hackensack	20.71	13.50	13.52	11.54	14.91	15.65	18.07	14.78	17.18	11.43
Bordentown	15.02	18.43	20.79	30.72	17.44	14.91	15.65	18.07	14.78	17.18
Burlington	20.18	18.30	20.44	24.21	18.82	25.47	18.87	19.28	18.20	20.18
Camden	18.73	23.15	28.68	28.37	22.06	23.55	22.07	19.97	20.71	17.82
Gloucester	21.82	18.89	24.88	24.77	20.73	23.75	28.19	15.91	13.10	
Bridgeton	14.81	17.70	19.50	16.35	17.62	16.38	16.85	14.41	15.02	13.31
Millville	13.48	19.48	16.51	16.62	15.23	13.79	17.01	15.94	9.67	12.83
Montclair								13.90	10.68	11.76
Newark	25.32	22.68	28.28	24.67	22.68	28.28	24.17	22.68	28.28	24.17
Orange	22.85	24.50	20.23	23.31	20.28	19.87	18.69	19.89	16.50	19.08
Bayonne	24.24	20.37	20.37	21.11	19.74	19.71	22.51	20.62	21.80	25.00
Harrison	26.65	27.67	31.70	28.27	26.50	22.12	25.45	18.61	23.77	
Hoboken	25.57	25.63	28.41	28.97	23.97	24.63	22.98	22.50	21.04	18.06
Jersey City	22.66	25.96	26.60	27.78	26.67	23.62	24.61	21.61	19.60	19.46
Town of Union	19.74	22.42	26.65	20.80	20.31	18.97	17.62	15.86	14.70	13.53
Trenton	14.94	17.35	15.51	19.75	16.16	14.14	18.01	18.60	16.44	15.43
New Brunswick	20.18	17.71	17.51	24.60	16.31	17.96	17.88	20.03	19.33	14.73
Perth Amboy	24.76	17.41	23.06	22.61	19.71	18.47	18.96	17.84	17.11	14.35
South Amboy									17.31	13.14
Long Branch*	12.41	14.66	12.16	12.40	10.85	9.88	14.18	12.51	14.11	18.13
Dover									19.12	15.73
Morrisstown	24.32	19.91	16.55	20.80	18.55	19.04	18.56	18.85	16.16	17.83
Passaic	24.86	16.81	23.75	22.37	21.64	20.67	21.57	22.38	24.29	19.84
Paterson	23.02	21.87	22.95	22.61	21.00	20.31	18.25	19.22	18.25	17.15
Salem	18.18	17.60	16.86	19.58	17.42	20.49	16.69	16.77	16.65	18.30
Elizabeth	20.18	19.30	19.41	21.19	20.22	18.95	18.25	18.06	17.16	15.50
Plainfield	16.97	16.89	16.47	17.04	19.21	17.33	17.30	15.91	15.91	15.16
Rahway	19.20	19.32	17.61	25.05	23.87	18.76	18.12	17.13	16.06	14.40
Phillipsburg	15.98	14.96	15.75	14.77	14.29	13.50	20.71	14.70	16.75	18.30

* The death-rate in summer resorts is calculated on the basis of the resident population, whereas the actual population is often several times larger, and on account of this floating population and the large number of invalids included in it, the death-rate is not a criterion of health conditions.

TABLE 9.—SHOWING DEATH-RATE, PER 1,000 POPULATION, IN THE CITIES OF NEW JERSEY HAVING OVER 5,000 POPULATION, FOR THIRTY-TWO YEARS, 1879-1910.—Continued.

NAMES OF CITIES.	1899.	1900.	1901.	1902.	1903.	1904.	1905.	1906.	1907.	1908.	1909.	1910.
Atlantic City*	19.03	17.85	10.85	16.28	15.33	14.92	16.79	17.95	16.85	15.10	14.96	17.33
Englewood	17.37	17.75	15.74	16.45	15.86	18.82	14.90	17.08	16.65	14.12	14.38	15.72
Garfield									16.89	19.52	22.01	12.73
Hackensack	11.94	13.66	17.52	18.34	16.39	13.78	17.48	16.89	18.54	14.06	16.38	16.23
Rutherford												
Bordentown	17.35	19.46	16.55	17.27	18.73	19.71	13.26	17.19	15.52	17.53	13.60	18.82
Burlington	16.87	24.76	19.75	21.28	22.46	22.82	16.67	17.87	18.68	18.68	15.66	18.00
Camden	19.35	14.11	17.56	16.30	16.05	18.01	16.67	18.44	17.74	16.75	16.57	17.21
Gloucester	19.50	19.88	18.27	21.03	17.89	17.82	18.37	18.44	19.55	19.58	17.36	15.54
Bridgeton	13.74	14.38	13.32	16.89	13.78	16.66	14.09	14.31	17.69	13.58	15.68	15.20
Millville	13.38	15.78	14.61	16.27	14.13	16.67	13.72	13.67	14.00	14.77	11.68	11.97
Bloomfield			14.55	18.50	11.21	14.64	11.40	14.09	11.63	12.28	11.46	11.15
East Orange		10.97	9.71	10.94	9.72	12.11	10.72	10.88	11.15	10.15	11.45	10.77
Irvington			9.24	14.66	12.86	10.67	12.58	13.83	14.34	11.88	14.36	11.96
Montclair	13.00	15.11	16.87	14.48	17.42	20.28	18.02	15.49	16.79	17.19	15.14	15.03
Newark	19.40	19.60	19.11	18.71	18.47	19.61	17.45	19.08	19.11	17.01	17.62	16.65
Orange	18.19	20.63	17.45	20.29	20.40	23.51	20.46	20.34	19.08	19.26	16.16	17.72
West Orange			18.25	19.27	10.52	11.02	13.59	10.66	11.49	12.53	13.40	8.65
Bayonne	25.39	17.39	16.38	15.82	18.44	16.60	15.76	17.18	16.95	15.05	13.59	14.89
Harrison	19.18	22.37	21.24	19.33	18.68	16.69	18.87	17.56	19.25	15.75	12.82	16.35
Hoboken	19.91	23.01	18.67	18.80	17.70	22.33	21.11	21.46	22.91	18.31	17.64	18.90
Jersey City	19.78	20.34	19.12	18.65	18.82	20.85	18.83	19.36	19.42	17.82	17.36	16.46
Kearny				17.45	17.68	23.70	17.30	17.54	14.60	15.57	13.13	14.79
Town of Union	11.63	14.16	11.25	16.83	16.07	17.76	14.92	16.32	16.41	16.29	15.01	11.99
West Hoboken				12.95	11.76	14.48	14.37	12.71	11.79	12.27	12.40	10.90
West New York				14.85	11.98	16.14	15.42	13.72	17.07	16.88	17.39	12.46
Lambertville									14.71	9.73	13.54	12.24
Princeton									9.18	14.23	7.89	15.19
Trenton	17.71	16.42	16.35	17.19	18.30	18.09	17.63	17.28	18.06	17.92	17.88	20.84
New Brunswick	16.04	21.29	18.18	20.00	19.43	22.16	19.66	17.76	19.19	18.15	19.00	21.21
Perth Amboy	16.16	14.46	16.53	14.82	12.70	14.69	12.30	22.89	13.68	12.82	13.81	15.78
South Amboy	12.85	18.16	14.14	13.52	15.68	16.06	19.97	12.89	16.86	14.51	15.20	15.41
Asbury Park*									14.88	16.35	10.88	16.75
Long Branch*	17.31	18.15	24.07	21.50	20.21	22.37	21.51	18.15	18.59	16.02	17.66	21.96
Red Bank									15.87	15.97	14.31	13.79
Dover	14.94	13.16	16.01	15.89	13.87	14.09	15.58	11.19	15.95	13.83	16.70	13.29
Morrisstown	19.18	16.38	18.50	16.64	17.85	18.84	20.42	21.10	22.49	21.07	19.77	22.67
Passaic	23.64	20.99	22.87	17.71	20.03	18.52	18.29	16.39	19.30	17.37	17.06	14.95
Paterson	19.65	18.70	17.58	16.37	15.28	17.84	16.51	17.66	16.12	16.19	16.19	14.73
Salem	18.30	20.13	14.11	16.30	17.21	20.31	16.92	16.90	16.28	17.30	13.10	14.21
North Plainfield			12.40	12.44	13.17	11.57	17.27	9.59	14.85	9.93	10.65	12.75
Elizabeth	17.25	17.69	17.17	15.05	15.85	18.72	15.63	17.64	18.70	16.54	16.88	15.31
Plainfield	15.72	16.01	16.36	15.94	15.84	16.89	15.70	15.93	18.01	16.43	14.08	15.77
Rahway	16.67	15.50	14.87	17.32	15.50	13.99	13.64	12.12	15.99	14.65	13.12	10.69
Summit			11.02	11.81	14.28	13.03	12.27	14.12				

CHART SHOWING RELATIVE MORTALITY IN CERTAIN CITIES OF NEW JERSEY FOR THE YEAR ENDING DECEMBER 31, 1910.

East Orange.....	Population, 34,371. Deaths, 370. Rate per 1,000, 10.77.
West Hoboken.....	Population, 33,403. Deaths, 386. Rate per 1,000, 10.90.
Bloomfield.....	Population, 15,070. Deaths, 168. Rate per 1,000, 11.15.
Millville.....	Population, 12,451. Deaths, 149. Rate per 1,000, 11.97.
Town of Union.....	Population, 21,023. Deaths, 252. Rate per 1,000, 11.99.
Paterson.....	Population, 123,600. Deaths, 1,850. Rate per 1,000, 14.73.
Kearny.....	Population, 18,659. Deaths, 276. Rate per 1,000, 14.79.
Bayonne.....	Population, 55,545. Deaths, 827. Rate per 1,000, 14.89.
Passaic.....	Population, 54,773. Deaths, 819. Rate per 1,000, 14.95.
Montclair.....	Population, 21,550. Deaths, 324. Rate per 1,000, 15.03.
Bridgeton.....	Population, 14,209. Deaths, 216. Rate per 1,000, 15.20.
Elizabeth.....	Population, 73,409. Deaths, 1,124. Rate per 1,000, 15.31.
Plainfield.....	Population, 20,550. Deaths, 324. Rate per 1,000, 15.77.
Perth Amboy.....	Population, 32,121. Deaths, 507. Rate per 1,000, 15.78.
Hackensack.....	Population, 14,050. Deaths, 228. Rate per 1,000, 16.23.
Harrison.....	Population, 14,498. Deaths, 237. Rate per 1,000, 16.35.
Jersey City.....	Population, 267,779. Deaths, 4,407. Rate per 1,000, 16.46.
Newark.....	Population, 347,460. Deaths, 5,784. Rate per 1,000, 16.65.
Camden.....	Population, 94,538. Deaths, 1,327. Rate per 1,000, 17.21.
*Atlantic City.....	Population, 49,150. Deaths, 800. Rate per 1,000, 17.33.
Orange.....	Population, 29,630. Deaths, 525. Rate per 1,000, 17.72.
Hoboken.....	Population, 70,324. Deaths, 1,329. Rate per 1,000, 18.90.
Trenton.....	Population, 96,815. Deaths, 1,969. Rate per 1,000, 20.34.
New Brunswick.....	Population, 23,388. Deaths, 496. Rate per 1,000, 21.21.
*Long Branch.....	Population, 13,298. Deaths, 292. Rate per 1,000, 21.96.
Morristown.....	Population, 12,507. Deaths, 296. Rate per 1,000, 23.67.

*The death-rate in summer resorts is calculated on the basis of the resident population, whereas the actual population is often several times larger, and on account of this floating population and the large number of invalids included in it, the death-rate is not a criterion of health conditions.

TABLE 9.—SHOWING NUMBER OF DEATHS IN NEW JERSEY FOR THE YEAR ENDING DECEMBER 31, 1910, FROM TEN SELECTED PREVENTABLE DISEASES, WITH PERCENTAGE OF TOTAL MORTALITY.

NAMES OF DISEASES.	Deaths.	Percentage of total mortality.
Consumption.....	3,877	9.82
Pneumonia.....	3,156	7.99
Diarrhoeal diseases of children.....	2,929	7.42
Diphtheria.....	728	1.84
Typhoid fever.....	392	.99
Whooping cough.....	389	.98
Measles.....	186	.47
Scarlet fever.....	229	.58
Malarial fever.....	25	.06
Small-pox.....		

TABLE 10.—SHOWING DEATHS FROM CERTAIN SELECTED CAUSES OF DEATH, PER 10,000 INHABITANTS, FOR THE YEARS ENDING DECEMBER 31, 1909, AND DECEMBER 31, 1910; ALSO SHOWING AVERAGE NUMBER OF DEATHS FROM SAID DISEASES DURING PAST THIRTY-TWO YEARS.

DISEASES.	Average number of deaths for thirty-two years.	Deaths per 10,000 inhabitants during year ending December 31st, 1909.	Deaths per 10,000 inhabitants during year ending December 31st, 1910.
Consumption.....	3,409	15.34	15.28
Diarrhoeal diseases of children..	2,871	10.07	11.54
Pneumonia*.....		13.15	12.44
Diseases of heart and circulation.....	2,364	17.10	17.49
Digestive and intestinal diseases.....	1,565	9.60	10.43
Diphtheria and croup.....	1,158	2.59	2.87
Renal and cystic diseases.....	1,570	11.89	11.98
Violent deaths.....	1,423	10.54	9.96
Cancer.....	858	7.07	7.24
Typhoid fever.....	503	1.28	1.55
Scarlet fever.....	400	1.44	.90
Puerperal.....	270	1.32	1.49
Whooping cough.....	241	1.21	1.53
Malarial fever.....	155	.11	.10
Measles.....	160	1.03	.73
Erysipelas.....	91	.24	.44
Acute rheumatism.....	79	.29	.21
Small-pox.....	42	.01	

*Deaths from pneumonia were not separately recorded until the year 1901.

TABLE 11.—SHOWING MORTALITY IN NEW JERSEY, FROM CERTAIN SELECTED CAUSES OF DEATH, FOR THE YEAR ENDING DECEMBER 31, 1910, COMPARED WITH DEATHS FOR THE PREVIOUS YEAR.

SELECTED DISEASES.	Deaths for year ending December 31st, 1909.	Deaths for year ending December 31st, 1910.	Comparative mortality.
Consumption	3,608	3,877	+ 269
Diseases of heart and circulation	4,023	4,438	+ 415
Renal and cystic diseases	2,797	3,039	+ 242
Digestive and intestinal diseases	2,258	2,645	+ 387
Diarrhoeal diseases of children	2,369	2,929	+ 560
Cancer	1,663	1,838	+ 175
Diphtheria	610	728	+ 118
Typhoid fever	301	392	+ 91
Scarlet fever	338	229	- 109
Fuerveral	311	377	+ 66
Whooping cough	284	389	+ 105
Erysipelas	57	112	+ 55
Acute rheumatism	68	54	- 14
Measles	242	186	- 56
Malarial fever	25	25	.....
Small-pox	2	.....	- 2

CHART SHOWING DEATHS IN NEW JERSEY, FROM CERTAIN SPECIFIED DISEASES, FOR THE PAST THIRTY-TWO YEARS, ARRANGED IN ORDER OF GREATEST FREQUENCY.

DISEASES	NUMBER OF DEATHS	10,000	20,000	30,000	40,000	50,000	60,000	70,000	80,000	90,000	100,000
CONSUMPTION	109,077										
DIARRHOEAL DISEASES—CHOLERA	91,867										
DISEASES OF HEART & CIRCULATION	75,662										
DISEASES OF INTESTINAL ORGANS	50,095										
RENAL & CYSTIC DISEASES	50,227										
VIOLENT DEATHS	45,548										
DIPHTHERIA & CROUP	37,045										
CANCER	27,453										
TYPHOID FEVER	16,090										
SCARLET FEVER	12,808										
FUERVERAL FEVER	8,654										
WHOOPIING COUGH	7,720										
MEASLES	5,132										
MALARIAL FEVER	4,046										
ERYSIPELAS	2,916										
ACUTE RHEUMATISM	2,541										
SMALL POX	1,301										

CONSUMPTION.

The death-rate from consumption for the year ending December 31st, 1910, was 15.28 per 10,000 population, which is the lowest in the history of this department, covering a period of thirty-two years.

No doubt the mortality from this disease will be considerably less in the years to come because of the fact that the Legislature has enacted certain laws which permit the State Board of Health to maintain an active campaign to prevent the spread of tuberculosis. One of the most important of these laws is chapter 12, laws of 1910, in which the State Board of Health is given an appropriation for educational and practical purposes in the study, treatment and prevention of tuberculosis, the publication and distribution of literature relating to this disease, and the maintenance of a State tuberculosis exhibit which shall be at the disposal of all communities throughout the State.

The appropriation to carry on this work was not available until November 1st, 1911, therefore the State Board of Health has not yet had sufficient time to secure definite results; however a special tuberculosis inspector has been appointed, and it shall be his duty under the direction of the Board to carry out the provisions of the law to the fullest extent permitted by the appropriation.

TABLE 12.—DEATHS FROM CONSUMPTION IN NEW JERSEY, BY AGE PERIODS, FOR TEN YEARS.

YEARS.	AGE PERIODS.										Totals.	
	Under 1 year.	1 to 10	10 to 20	20 to 30	30 to 40	40 to 50	50 to 60	60 to 70	70 to 80	Over 80		Not stated.
1901.....	39	73	241	937	827	510	319	199	87	25	.....	3,257
1902.....	39	62	227	842	759	504	281	199	76	19	7	3,015
1903.....	49	81	285	941	877	534	310	191	95	16	1	3,380
1904.....	67	80	315	983	1,005	575	337	217	78	11	2	3,670
1905.....	40	89	309	972	915	606	335	197	100	23	1	3,587
1906.....	62	93	309	953	942	646	339	199	84	26	1	3,654
1907.....	56	61	256	978	967	682	407	229	90	25	.....	3,751
1908.....	36	74	272	983	1,013	602	344	197	80	15	.....	3,616
1909.....	58	68	258	917	976	657	349	220	86	24	.....	3,608
1910.....	46	74	271	987	1,047	723	407	216	81	25	.....	3,877

TABLE 13.—SHOWING NUMBER OF DEATHS AND DEATHS PER 10,000 POPULATION FROM CONSUMPTION IN NEW JERSEY, AND THE PROPORTION OF DEATHS FROM CONSUMPTION TO TOTAL DEATHS DURING THIRTY-TWO YEARS.

YEARS.	Popula- tion.*	Total deaths in New Jersey.	Deaths from con- sumption.	Proportion of deaths from con- sumption to total deaths.	Deaths from con- sumption per 10,000 population.
1879	1,020,584	20,444	2,788	13.64	27.32
1880	1,130,892	18,967	2,714	14.30	24.00
1881	1,160,275	20,810	2,989	14.36	25.76
1882	1,189,658	25,910	3,475	13.41	29.21
1883	1,209,048	23,510	3,121	13.39	25.81
1884	1,248,224	21,716	3,215	14.80	25.76
1885	1,278,033	23,807	3,320	13.94	25.19
1886	1,310,431	22,734	3,205	14.10	24.46
1887	1,342,829	24,331	3,653	15.01	27.20
1888	1,375,227	27,173	3,358	12.44	24.42
1889	1,407,625	26,543	3,449	12.99	24.50
1890	1,441,017	28,530	3,669	12.66	25.46
1891	1,478,784	28,840	3,456	11.98	23.37
1892	1,511,653	32,685	3,675	10.94	23.65
1893	1,538,799	30,596	3,429	11.21	22.28
1894	1,578,373	30,004	3,433	11.44	21.75
1895	1,672,942	30,634	3,542	11.56	21.17
1896	1,718,543	30,767	3,358	10.92	19.54
1897	1,764,144	29,822	3,237	10.85	18.35
1898	1,810,008	27,337	3,225	11.79	17.82
1899	1,855,872	30,999	3,584	11.56	19.31
1900	1,883,669	31,474	3,514	11.17	18.64
1901	1,925,781	31,739	3,257	10.26	16.91
1902	1,967,893	33,655	3,015	8.96	15.32
1903	2,016,797	31,820	3,380	10.62	16.76
1904	2,058,900	35,298	3,670	10.40	17.83
1905	2,144,143	33,884	3,587	10.59	16.73
1906	2,196,238	35,670	3,654	10.24	16.64
1907	2,248,351	37,408	3,749	10.02	16.67
1908	2,300,427	35,597	3,616	10.16	15.72
1909	2,352,522	36,359	3,608	9.92	15.84
1910	2,537,167	39,494	3,877	9.82	15.28

* Estimated except for census years.

TABLE 14.—SHOWING MORTALITY RATES FROM ALL CAUSES AND FROM CONSUMPTION ONLY, IN MUNICIPALITIES HAVING 5,000 INHABITANTS OR OVER, FOR THE YEAR ENDING DECEMBER 31, 1910, PER 10,000 POPULATION.

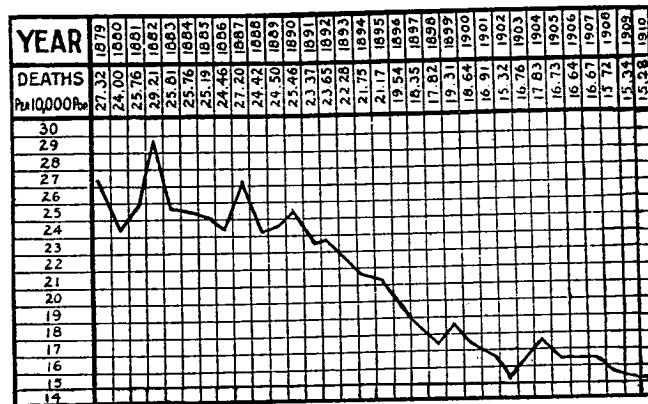
	Deaths from all causes per 10,000 population.	Deaths from consumption per 10,000 population.
Atlantic County	168.3	15.92
Atlantic City	173.6	10.40
Bergen County	120.0	11.26
Englewood	157.2	7.05
Garfield	127.3	4.88
Hackensack	162.3	14.23
Rutherford	97.9	5.88
Burlington County	161.4	12.60
Bordentown	188.2	11.76
Burlington	180.0	15.60
Camden County	151.2	15.51
Camden City	172.1	11.92
Gloucester City	155.4	19.02
Cape May County	149.4	11.14
Cumberland County	146.7	12.63
Bridgeton	132.0	20.41
Millville	119.7	13.66
Essex County	158.3	17.17
Bloomfield	111.5	9.29
East Orange	107.7	9.02
Irlington	139.7	13.96
Montclair	150.3	13.92
Newark	166.5	20.58
Orange	177.2	22.61
West Orange	86.5	8.20
Gloucester County	135.7	15.63
Hudson County	215.1	50.94
Bayonne	148.9	10.98
Harrison	163.5	17.93
Hoboken	189.0	21.47
Jersey City	184.6	16.54
Kearny	147.9	14.47
Town of Union	119.9	7.14
West Hoboken	109.0	9.89
West New York	124.6	15.49
Hunterdon County	149.3	14.53
Lambertville	122.4	10.74
Mercer County	127.8	11.39
Princeton	151.9	31.15
Trenton	206.4	19.32
Middlesex County	124.6	8.86
New Brunswick	212.1	17.10
Perth Amboy	157.8	10.90
South Amboy	154.1	2.85
Monmouth County	140.6	10.46
*Asbury Park	167.5	16.75
*Long Branch	219.6	15.04
Red Bank	152.7	5.41
Morris County	158.4	14.07
Dover	135.3	8.03
Morristown	236.7	17.59
Ocean County	153.9	14.54
Passaic County	117.7	9.85
Passaic City	164.5	10.04
Paterson	147.3	16.84
Salem County	129.0	19.13
Salem City	142.1	7.56
Somerset County	136.2	8.87
North Plainfield	127.5	6.54
Sussex County	140.0	6.35
Union County	112.7	9.57
Elizabeth	153.1	14.58
Plainfield	167.7	17.03
Rahway	106.0	8.57
Summit	184.0	20.00
Westfield	121.5	9.35
Warren County	149.2	10.93
Phillipsburg	153.2	13.67

* The death-rate in summer resorts is calculated on the basis of the resident population, whereas the actual population is often several times larger, and on account of this floating population and the large number of invalids included in it, the death-rate is not a criterion of health conditions.

TABLE 15.—SHOWING AVERAGE ANNUAL DEATH-RATES FROM ALL CAUSES AND AVERAGE ANNUAL DEATH-RATES FROM CONSUMPTION IN NEW JERSEY FOR THIRTY-TWO YEARS, BY COUNTIES, COMPARED WITH DEATH-RATES FROM ALL CAUSES AND DEATH-RATES FROM CONSUMPTION. FOR THE YEAR ENDING DECEMBER 31, 1910, PER 10,000 POPULATION.

COUNTIES.	AVERAGES PER YEAR.			
	Average annual death-rate from all causes per 10,000 population for thirty-two years.	Average annual death-rate from consumption per 10,000 population for thirty-two years.	Death-rate per 10,000 population from all causes for year ending Dec. 31, 1910.	Death-rate from consumption per 10,000 population for year ending Dec. 31, 1910.
Atlantic County.....	169.8	16.79	170.8	12.38
Bergen County.....	95.1	14.13	126.4	10.51
Burlington County.....	154.9	17.78	165.4	12.92
Camden County.....	186.6	21.93	165.4	13.38
Cape May County.....	139.3	13.78	149.4	11.14
Cumberland County.....	78.5	19.35	142.0	14.87
Essex County.....	190.7	25.55	157.4	18.60
Gloucester County.....	144.7	17.06	182.7	18.65
Hudson County.....	211.0	25.09	162.9	18.33
Hunterdon County.....	135.7	14.58	145.7	14.00
Mercer County.....	174.1	21.99	187.0	18.30
Middlesex County.....	160.9	16.38	153.7	10.75
Monmouth County.....	151.6	16.39	155.5	11.61
Morris County.....	106.1	19.54	169.1	14.06
Ocean County.....	143.7	19.65	153.9	14.54
Passaic County.....	182.9	21.13	145.0	13.39
Salem County.....	144.6	18.37	132.2	16.30
Somerset County.....	141.9	15.41	134.0	8.50
Sussex County.....	126.5	14.63	140.0	6.35
Union County.....	135.0	15.30	144.2	13.77
Warren County.....	146.6	14.68	150.5	11.81
The State.....	174.2	20.69	155.7	15.28

CHART SHOWING DEATHS FROM CONSUMPTION IN NEW JERSEY, PER 10,000 POPULATION, FOR THE THIRTY-TWO YEARS, ENDING DECEMBER 31, 1910.



PNEUMONIA.

Deaths from pneumonia in New Jersey have been separately classified for the past ten years, and during this decade the death-rate from this disease has not shown an alarming increase; the death-rate for the past year per 10,000 inhabitants being 12.44 as against 13.15 over the previous year, and there is no doubt that the campaign against tuberculosis and other diseases of the respiratory system, which called for the enactment of such laws as the abolishment of the public drinking cup, will also be the means of lessening to some extent diseases of the respiratory system.

TABLE 16.—SHOWING DEATHS IN NEW JERSEY FROM PNEUMONIA, WITH AGE AT DEATH, FOR THE YEAR ENDING DECEMBER 31, 1910.

DEATHS FROM PNEUMONIA.	AGE PERIODS.																		Total.		
	Under 1 mo.	Under 1 year.																		Over 90.	Not stated.
		1 to 5	5 to 10	10 to 15	15 to 20	20 to 25	25 to 30	30 to 35	35 to 40	40 to 45	45 to 50	50 to 55	55 to 60	60 to 70	70 to 80	80 to 90					
91	411	410	56	48	53	53	81	98	128	138	146	152	183	166	430	392	157	19	2,156		

TABLE 17.—SHOWING DEATHS FROM PNEUMONIA IN CITIES OF OVER 5,000 INHABITANTS, IN NEW JERSEY, BY MONTHS, FOR THE EIGHT YEARS ENDING DECEMBER 31, 1910, AND DEATH-RATES PER 10,000 INHABITANTS, FOR EACH OF SAID YEARS.

YEARS.	Estimated population of cities of over 5,000 inhabitants.	MONTHS.												Totals.	Death-rate per 10,000 inhabitants.
		Jan.	Feb.	March.	April.	May.	June.	July.	August.	Sept.	Oct.	Nov.	Dec.		
1903	1,363,464	271	288	261	128	135	67	98	58	75	91	202	278	1,972	14.46
1904	1,370,719	401	350	394	315	241	134	42	51	72	108	187	289	2,584	18.85
1905	1,429,100	309	271	251	190	178	96	75	73	69	121	199	209	2,041	14.28
1906	1,505,142	340	286	341	175	180	86	80	69	89	127	178	285	2,245	14.92
1907	1,546,574	361	290	333	235	214	144	100	64	93	142	162	364	2,502	16.18
1908	1,584,217	329	279	252	178	174	80	66	73	89	154	149	269	2,002	13.21
1909	1,623,851	301	254	314	229	208	104	67	52	95	142	203	286	2,325	14.32
1910	1,742,534	357	224	297	273	191	123	69	76	84	103	185	332	2,314	13.25
Totals		2,669	2,242	2,443	1,798	1,550	834	507	516	666	998	1,465	2,312	18,075	

TABLE 18.—SHOWING DEATHS AND DEATH-RATES FROM PNEUMONIA IN NEW JERSEY FOR TEN YEARS, 1901-1910.

YEARS.	Deaths from pneumonia.	Deaths from pneumonia per 10,000 inhabitants.
1901	2,539	13.18
1902	2,421	12.30
1903	2,628	13.03
1904	3,486	16.93
1905	2,764	12.89
1906	3,117	14.19
1907	3,307	14.70
1908	2,773	12.05
1909	3,094	13.15
1910	3,156	12.44

DEATHS AMONG CHILDREN.

A noticeable decrease is shown in the death-rate among children under five years of age, per 10,000 population, for the year ending December 31st, 1910. The death-rate per 10,000 for the year mentioned being 45.91, which is lower than for any period during the past seven years.

TABLE 19.—SHOWING NUMBER OF DEATHS IN NEW JERSEY; DEATHS AMONG CHILDREN UNDER FIVE YEARS OF AGE; DEATHS UNDER FIVE YEARS FROM DIARRHOEAL DISEASES, AND DEATHS UNDER FIVE YEARS PER 10,000 INHABITANTS, FOR THE TEN YEARS ENDING DECEMBER 31, 1910.

DEATHS.	NEW JERSEY.									
	1901.	1902.	1903.	1904.	1905.	1906.	1907.	1908.	1909.	1910.
Total deaths.....	31,730	31,319	31,320	35,298	35,864	35,670	37,408	35,597	36,359	39,494
Deaths under five years.....	9,549	9,802	9,950	10,913	9,864	11,216	10,867	10,869	11,137	11,648
Deaths under five years from diarrhoea.....	1,787	1,857	1,603	2,354	2,290	2,365	2,453	2,561	2,350	2,929
Percentage of deaths under five years to total deaths.....	30.09	31.30	31.27	30.92	29.13	31.58	29.05	30.53	30.63	29.49
Deaths under five years per 10,000 population.....	49.59	49.31	44.34	53.00	46.00	51.21	48.33	47.25	47.34	45.91

TABLE 20.—SHOWING DEATHS AMONG CHILDREN UNDER FIVE YEARS OF AGE IN NEW JERSEY PER 10,000 POPULATION, FOR THIRTY-TWO YEARS.

YEARS.	Deaths under 1 year per 10,000 population.	Deaths from 1 to 5 years per 10,000 population.	YEARS.	Deaths under 1 year per 10,000 population.	Deaths from 1 to 5 years per 10,000 population.
1879	45.58	33.97	1895	45.67	21.70
1880	40.38	25.12	1896	43.99	24.43
1881	39.90	25.75	1897	40.16	20.00
1882	49.88	38.48	1898	35.91	15.83
1883	44.48	28.22	1899	38.22	17.04
1884	41.04	22.82	1900	37.05	18.44
1885	44.69	26.67	1901	36.11	13.48
1886	41.31	23.53	1902	36.18	13.63
1887	43.56	25.29	1903	37.08	15.38
1888	47.51	23.90	1904	36.18	16.82
1889	48.61	24.95	1905	32.42	13.59
1890	49.38	25.28	1906	35.39	15.31
1891	46.90	25.36	1907	34.39	13.94
1892	52.74	29.08	1908	34.01	13.24
1893	49.22	24.26	1909	32.55	14.79
1894	49.75	22.97	1910	32.92	12.99

TABLE 21.—SHOWING DEATHS IN NEW JERSEY FROM DIARRHOEAL DISEASES OF CHILDREN, WITH AGES AT DEATH, COMPARED WITH DEATHS FROM ALL CAUSES AMONG CHILDREN UNDER FIVE YEARS OF AGE, FOR YEAR ENDING DECEMBER 31, 1910.

AGE PERIODS.	Deaths from diarrhoeal diseases.	Deaths from all causes among children under five years of age.
Under one month.....	227	2,887
Over one month and under one year.....	2,181	5,465
One to five.....	521	3,296
Total	2,929	11,648

TABLE 22.—SHOWING TOTAL DEATHS, DEATHS UNDER FIVE YEARS, PERCENTAGE OF YEARS PER 10,000 INHABITANTS, FOR CERTAIN CITIES OF NEW JERSEY 31, 1910.

NAME OF PLACE.	1906.				1907.			
	Total deaths.	Deaths under five years.	Percentage of deaths under five years to total deaths.	Deaths under five years per 10,000 population.	Total deaths.	Deaths under five years.	Percentage of deaths under five years to total deaths.	Deaths under five years per 10,000 population.
Atlantic City.....	710	170	23.94	42.99	699	162	23.18	39.04
Bayonne.....	759	860	47.43	81.50	763	345	45.22	76.87
Bloomfield.....	170	51	30.00	42.26	145	47	32.41	37.70
Bridgeton.....	183	44	22.56	32.30	229	43	17.99	31.83
Burlington.....	146	43	29.45	55.65	155	38	24.52	45.81
Camden.....	1,563	566	36.17	66.71	1,506	455	30.21	41.12
Dover.....	72	29	40.27	45.06	104	27	25.96	41.42
East Orange.....	269	65	24.16	25.09	277	60	20.20	22.52
Elizabeth.....	1,097	398	36.28	64.00	1,194	421	35.26	65.92
Englewood.....	141	39	27.66	47.24	143	34	23.78	39.55
Gloucester City.....	153	56	36.60	67.49	167	65	38.92	76.10
Hackensack.....	133	61	31.61	53.37	218	68	31.19	57.82
Harrison.....	233	95	40.77	71.69	264	99	37.50	72.19
Hoboken.....	1,431	440	30.75	65.98	1,556	481	30.91	70.83
Irvington.....	101	22	21.78	29.08	114	25	21.92	31.45
Jersey City.....	4,607	1,538	33.38	64.63	4,723	1,456	30.83	59.57
Kearny.....	243	69	27.82	48.79	213	52	24.41	35.42
Long Branch.....	233	48	20.60	37.37	288	70	24.31	45.18
Millville.....	166	61	36.75	50.23	174	52	29.89	41.98
Montclair.....	261	91	34.87	54.20	291	93	31.95	53.65
Morristown.....	290	84	32.18	68.17	281	83	29.53	66.41
Newark.....	5,547	1,840	33.17	63.29	5,736	1,666	29.04	53.37
New Brunswick.....	422	164	38.86	69.03	468	163	34.82	66.85
North Plainfield.....	55	13	27.36	22.66	87	21	24.14	35.84
Orange.....	539	166	30.79	62.66	513	132	25.73	49.10
Passaic City.....	656	317	48.55	79.53	808	409	50.62	97.70
Paterson.....	1,922	681	34.18	60.37	1,839	523	28.44	45.35
Perth Amboy.....	355	190	53.62	69.01	399	198	49.62	67.87
Phillipsburg.....	161	55	34.16	48.34	220	85	38.64	57.93
Plainfield.....	304	85	27.96	44.58	358	86	24.02	43.64
Rahway.....	110	15	13.61	17.06	125	22	16.80	24.62
Red Bank.....	92	30	32.61	46.66	91	24	26.38	45.48
Salem City.....	111	25	22.52	38.06	109	24	22.02	35.88
South Amboy.....	137	49	35.77	78.30	105	37	35.24	59.47
Summit.....	103	19	18.31	26.56	85	21	24.71	28.17
Town of Union.....	287	87	30.31	50.05	291	94	32.30	53.01
Trenton.....	1,495	467	31.28	54.06	1,599	419	26.14	47.22
West Hoboken.....	385	134	34.81	44.25	371	129	34.77	40.98
West New York.....	104	40	38.46	62.76	136	63	46.32	79.07
West Orange.....	86	22	25.58	27.26	95	29	30.53	35.09

DEATHS UNDER FIVE YEARS TO TOTAL DEATHS AND DEATHS UNDER FIVE HAVING OVER 5,000 POPULATION FOR THE FIVE YEARS ENDING DECEMBER

NAME OF PLACE.	1908.				1909.				1910.			
	Total deaths.	Deaths under five years.	Percentage of deaths under five years to total deaths.	Deaths under five years per 10,000 population.	Total deaths.	Deaths under five years.	Percentage of deaths under five years to total deaths.	Deaths under five years per 10,000 population.	Total deaths.	Deaths under five years.	Percentage of deaths under five years to total deaths.	Deaths under five years per 10,000 population.
Atlantic City.....	656	149	22.71	34.30	679	161	23.71	35.46	800	213	26.63	46.15
Bayonne.....	722	335	46.40	69.81	678	300	44.25	60.13	827	353	42.58	63.91
Bloomfield.....	158	54	34.18	41.96	152	40	26.32	30.15	168	45	26.79	29.86
Bridgeton.....	180	48	26.89	31.97	210	49	23.33	36.59	216	40	18.52	28.15
Burlington.....	157	48	30.57	56.97	194	45	23.38	52.60	150	51	34.00	61.18
Camden.....	1,471	493	33.51	56.14	1,480	443	29.93	49.61	1,627	538	33.07	55.85
Dover.....	88	25	28.41	37.87	111	36	32.43	53.85	100	34	34.00	45.83
East Orange.....	278	64	23.02	23.38	322	57	17.70	20.28	370	65	17.57	18.91
Elizabeth.....	1,084	396	36.53	60.42	1,141	459	40.23	68.29	1,124	388	34.52	52.85
Englewood.....	126	33	26.19	36.98	135	50	37.04	54.02	156	32	20.51	32.25
Gloucester City.....	172	67	38.95	76.28	182	63	38.89	69.79	147	58	39.46	61.30
Hackensack.....	170	50	29.41	41.35	191	51	26.70	41.06	228	72	31.58	51.25
Hoboken.....	223	94	42.15	66.39	180	70	38.89	47.33	287	103	35.89	71.04
Irvington.....	1,266	405	31.99	58.59	1,241	400	32.23	56.86	1,329	390	27.09	51.91
Jersey City.....	96	22	22.22	26.39	127	32	25.20	36.70	142	32	22.54	26.94
Kearny.....	4,428	1,331	30.06	53.57	4,404	1,541	34.99	60.74	4,407	1,533	35.25	49.78
Long Branch.....	237	64	27.00	42.04	207	37	17.87	27.00	276	56	20.29	30.01
Millville.....	227	51	22.47	35.99	262	52	19.85	35.06	292	56	19.18	42.11
Montclair.....	187	53	28.41	43.44	151	46	30.46	39.59	149	41	27.52	32.93
Morristown.....	285	59	20.11	33.12	277	85	30.69	46.46	334	119	35.78	51.22
Newark.....	267	83	31.09	65.49	254	72	28.35	55.04	296	74	25.00	59.17
New Brunswick.....	5,198	1,640	31.55	53.66	5,516	1,742	31.58	56.64	5,784	1,775	30.69	51.08
North Plainfield.....	494	164	33.12	65.58	487	137	28.13	76.85	496	169	34.07	72.26
Orange.....	54	11	20.37	18.30	65	17	26.15	19.67	75	17	22.67	27.79
Passaic City.....	526	166	31.62	60.86	447	137	30.65	49.51	525	153	29.14	44.84
Paterson.....	762	285	37.52	67.75	738	435	58.81	94.80	819	412	50.31	75.22
Perth Amboy.....	1,867	599	32.14	43.46	1,888	526	27.86	45.11	1,850	519	28.05	41.32
Phillipsburg.....	395	218	55.19	70.75	432	229	53.01	70.57	307	296	50.49	79.70
Plainfield.....	151	42	27.81	37.93	158	31	19.62	19.38	213	73	33.80	51.79
Rahway.....	834	72	21.56	35.42	296	72	24.41	34.37	324	76	23.46	36.38
Red Bank.....	133	17	12.78	18.73	121	28	23.14	30.37	99	21	21.21	22.49
Salem City.....	85	14	16.47	20.70	102	32	31.37	46.17	113	29	25.66	39.20
South Amboy.....	118	36	30.51	52.77	91	26	28.67	37.42	94	23	23.40	33.26
Summit.....	90	36	40.00	58.04	94	34	36.17	54.97	108	31	28.70	41.84
Town of Union.....	106	19	17.92	24.45	97	30	30.93	37.13	138	27	19.56	30.00
Trenton.....	294	79	26.87	43.66	277	69	24.91	37.33	262	96	36.65	45.66
West Hoboken.....	1,625	528	32.18	57.66	1,601	600	30.10	53.83	1,959	655	33.27	67.65
West New York.....	401	138	34.41	42.23	420	160	38.10	47.24	106	106	100.00	29.94
West Orange.....	141	47	33.33	56.27	152	55	36.18	62.94	169	70	41.42	51.62
	106	36	33.96	42.54	116	31	26.72	35.81	95	32	33.68	29.14

TABLE 23.—SHOWING DEATHS IN CERTAIN CITIES OF NEW JERSEY, ALSO DEATHS AMONG CHILDREN UNDER FIVE YEARS OF AGE; DEATHS UNDER FIVE YEARS FROM DIARRHOEA AND DEATHS UNDER FIVE YEARS PER 10,000 INHABITANTS.

DEATHS.	NEWARK.				
	1906.	1907.	1908.	1909.	1910.
Total deaths.....	5,547	5,736	5,198	5,516	5,784
Deaths under five years.....	1,840	1,666	1,640	1,742	1,775
Deaths under five years from diarrhoea.....	330	370	344	340	361
Percentage of deaths under five years to total deaths.....	33.17	29.04	31.55	31.58	30.69
Deaths under five years per 10,000 population.....	63.29	55.67	53.66	55.94	51.08

DEATHS.	JERSEY CITY.				
	1906.	1907.	1908.	1909.	1910.
Total deaths.....	4,607	4,723	4,428	4,404	4,407
Deaths under five years.....	1,538	1,456	1,331	1,541	1,333
Deaths under five years from diarrhoea.....	354	371	375	332	390
Percentage of deaths under five years to total deaths.....	33.38	30.83	30.06	34.99	30.25
Deaths under five years per 10,000 population.....	64.63	59.87	53.57	60.74	49.78

DEATHS.	PATERSON.				
	1906.	1907.	1908.	1909.	1910.
Total deaths.....	1,992	1,839	1,867	1,888	1,850
Deaths under five years.....	681	523	559	526	519
Deaths under five years from diarrhoea.....	130	125	128	108	142
Percentage of deaths under five years to total deaths.....	34.18	28.44	29.94	27.86	28.05
Deaths under five years per 10,000 population.....	60.37	45.85	48.46	45.11	41.32

DEATHS.	CAMDEN.				
	1906.	1907.	1908.	1909.	1910.
Total deaths.....	1,565	1,506	1,471	1,480	1,627
Deaths under five years.....	566	456	488	443	538
Deaths under five years from diarrhoea.....	89	84	57	88	102
Percentage of deaths under five years to total deaths.....	36.17	30.21	32.83	29.83	33.07
Deaths under five years per 10,000 population.....	66.71	62.70	55.00	49.61	55.95

DEATHS.	HOBOKEN.				
	1906.	1907.	1908.	1909.	1910.
Total deaths.....	1,431	1,556	1,266	1,241	1,329
Deaths under five years.....	440	481	405	400	360
Deaths under five years from diarrhoea.....	51	38	105	87	65
Percentage of deaths under five years to total deaths.....	30.75	30.91	32.00	32.23	27.00
Deaths under five years per 10,000 population.....	65.98	70.83	58.59	56.86	51.19

DEATHS.	TRENTON.				
	1906.	1907.	1908.	1909.	1910.
Total deaths.....	1,493	1,599	1,625	1,661	1,969
Deaths under five years.....	467	418	523	500	655
Deaths under five years from diarrhoea.....	108	113	95	108	133
Percentage of deaths under five years to total deaths.....	31.28	26.14	32.18	30.10	33.27
Deaths under five years per 10,000 population.....	54.08	47.22	57.66	53.83	67.63

TABLE 24.—SHOWING DEATHS IN NEW JERSEY UNDER FIVE YEARS OF AGE PER 10,000 POPULATION FOR THIRTY-TWO YEARS, TOGETHER WITH AVERAGES FOR THE NINETEEN YEARS, 1879-1897, AND ALSO FOR THE THIRTEEN YEARS, 1898-1910.

YEARS.	Deaths under five years per 10,000 population.	YEARS.	Deaths under five years per 10,000 population.
1879	75.55	1898	51.74
1880	65.50	1899	55.26
1881	65.65	1900	55.49
1882	88.36	1901	49.59
1883	72.70	1902	49.81
1884	63.86	1903	52.46
1885	71.36	1904	53.00
1886	65.14	1905	46.01
1887	68.85	1906	51.21
1888	76.41	1907	48.33
1889	73.56	1908	47.25
1890	74.74	1909	47.34
1891	72.26	1910	45.91
1892	81.82		
1893	73.48		
1894	72.72		
1895	67.46		
1896	68.42		
1897	60.16		
Average death-rate for nineteen years ending 1897.....	71.69	Average death-rate for thirteen years ending 1910.....	50.26

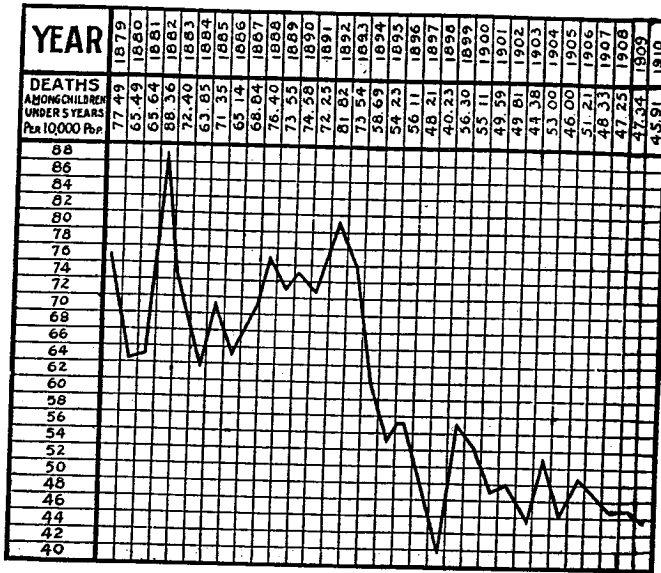
TABLE 25.—SHOWING PERCENTAGE OF DEATHS UNDER FIVE YEARS TO TOTAL DEATHS, AND DEATHS UNDER FIVE YEARS PER 10,000 INHABITANTS FOR CERTAIN CITIES OF NEW JERSEY HAVING OVER 5,000 POPULATION, FOR THE YEAR ENDING DECEMBER 31, 1910.

NAMES OF CITIES.	Percentage of deaths under five years to total deaths.	Deaths under five years per 10,000 inhabitants.
Atlantic City.....	26.63	46.15
Englewood.....	20.51	32.25
Garfield.....	67.69	86.16
Hackensack.....	31.58	51.25
Rutherford.....	20.29	19.87
Bordentown.....	28.75	54.12
Burlington.....	34.00	61.18
Camden.....	33.07	55.85
Gloucester.....	39.46	61.80
Bridgeton.....	18.52	28.15
Millville.....	27.52	32.92
Bloomfield.....	26.79	29.86
East Orange.....	17.57	18.91
Irvington.....	22.54	26.94
Montclair.....	38.73	55.22
Newark.....	30.69	51.08
Orange.....	29.14	51.64
West Orange.....	33.68	29.14
Bayonne.....	42.93	63.91
Harrison.....	43.46	71.04
Hoboken.....	27.09	51.19
Jersey City.....	30.25	49.78
Kearny.....	20.29	30.01
Town of Union.....	38.10	45.66
West Hoboken.....	27.46	29.94
West New York.....	41.42	51.62
Lambertville.....	15.79	19.33
Princeton.....	16.67	25.31
Trenton.....	33.27	67.65
New Brunswick.....	34.07	72.26
Perth Amboy.....	50.49	79.70
South Amboy.....	28.70	44.24
Asbury Park.....	25.88	43.35
Long Branch.....	19.18	42.11
Red Bank.....	25.66	39.20
Dover.....	34.00	45.53
Morristown.....	25.00	59.17
Passaic.....	50.31	75.22
Paterson.....	28.05	41.32
Salem.....	23.40	33.26
North Plainfield.....	21.79	27.79
Elizabeth.....	34.52	52.85
Plainfield.....	23.46	36.98
Rahway.....	21.21	22.49
Summit.....	19.56	36.00
Westfield.....	16.67	20.25
Phillipsburg.....	33.80	51.79

TABLE 26.—SHOWING NUMBER OF DEATHS IN NEW JERSEY AMONG CHILDREN UNDER FIVE YEARS OF AGE IN MANUFACTURING DISTRICTS, AND ALSO IN COUNTIES OUTSIDE OF THE LARGER TOWNS, WITH COMPARATIVE MORTALITY.

NAMES OF MANUFACTURING TOWNS.	Population, 1910.	Number of deaths occurring in children under five years of age.	Number of deaths of children under five years of age for each 1,000 of population.	Population of counties outside of larger cities.	Number of deaths occurring in children under five years of age in counties outside of larger cities.	Number of deaths of children under five years of age for each 1,000 of population in counties outside of larger cities.
Bayonne (Hud. Co.).....	55,545	355	6.39	40,440	175	4.33
Beverly (Bur. Co.).....	2,140	13	6.07	53,979	245	4.54
Boniton (Morris Co.).....	4,390	17	3.45	54,729	174	3.15
Bordentown (Bur. Co.).....	4,250	23	5.41	53,979	245	4.54
Bound Brook (Som. Co.).....	3,970	17	4.28	32,708	93	2.84
Bridgeton (Cumb. Co.).....	14,209	49	2.82	28,493	2.83	
Burlington (Bur. Co.).....	8,386	51	6.12	53,979	245	4.54
Camden (Cam. Co.).....	94,583	58*	5.59	38,029	125	3.29
Carlstadt (Ber. Co.).....	3,807	8	2.10	96,770	349	3.61
Elizabeth (U. Co.).....	73,409	388	5.29	22,981	84	3.66
Garfield (Ber. Co.).....	10,213	88	8.62	96,770	349	3.61
Gloucester City (Cam. Co.).....	9,462	58	6.13	38,029	125	3.29
Hoboken (Hud. Co.).....	70,324	360	5.12	40,440	175	4.33
Jersey City (Hud. Co.).....	267,779	1,333	4.98	40,440	175	4.33
Lambertville (Hunt. Co.).....	4,657	9	1.93	28,912	68	2.35
Lodi (Ber. Co.).....	4,138	30	7.25	96,770	349	3.61
Millburn (Essex Co.).....	3,729	10	2.69	41,939	170	4.05
Milltown (Mdx. Co.).....	1,584	6	3.79	51,910	241	4.64
Millville (Cumb. Co.).....	12,451	41	3.29	28,493	82	2.83
Newark (Essex Co.).....	347,469	1,775	5.11	41,939	170	4.05
New Brunswick (Mdx. Co.).....	23,388	169	7.23	51,910	241	4.64
Orange (Essex Co.).....	29,680	153	5.16	41,939	170	4.05
Passaic City (Pas. Co.).....	54,773	412	7.52	35,529	138	3.88
Paterson (Pas. Co.).....	125,600	519	4.13	35,529	138	3.88
Perth Amboy (Mdx. Co.).....	32,121	256	7.97	51,910	241	4.64
Phillipsburg (W. Co.).....	13,903	72	5.18	29,284	107	3.65
Plainfield (U. Co.).....	20,550	76	3.70	22,981	84	3.66
Rahway (U. Co.).....	9,337	21	2.25	22,981	84	3.66
Raritan (Som. Co.).....	3,672	14	3.81	32,708	93	2.84
Riverton Bor. (Bur. Co.).....	1,783	5	2.80	53,979	245	4.54
Salem City (Salem Co.).....	6,614	22	3.33	20,385	43	2.11
South River (Mdx. Co.).....	4,772	32	6.71	51,910	241	4.64
Town of Union (Hud. Co.).....	21,023	96	4.57	40,440	175	4.33
Trenton (Mer. Co.).....	96,815	655	6.77	23,706	64	2.70
Vineland (Cumb. Co.).....	5,282	36	6.81	28,493	82	2.83
Wharton (Mor. Co.).....	2,983	16	5.36	54,729	174	3.15

CHART SHOWING DEATHS IN NEW JERSEY AMONG CHILDREN UNDER FIVE YEARS OF AGE, PER 10,000 POPULATION, FOR THIRTY-TWO YEARS.



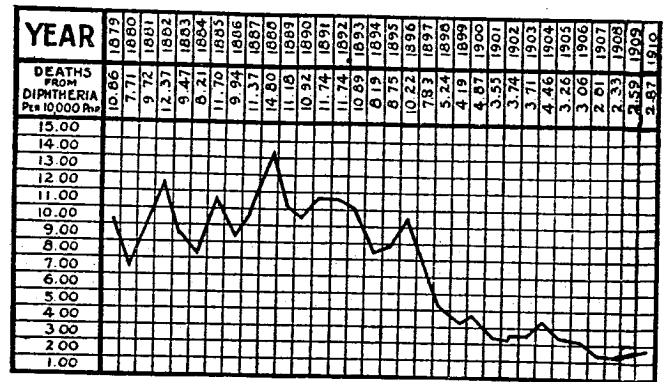
DIPHTHERIA.

A slight increase is shown in the death-rate from diphtheria for the past year. The rate per 10,000 population in New Jersey for the past three years is as follows: 1908, 2.33; 1909, 2.59; 1910, 2.87. It will be noticed by these figures that the death-rate is almost stationary, and with the facilities at hand to permit a rapid examination of sputum in suspected cases, and the use of antitoxin, there is no reason to suppose that an increase in the death-rate from this disease will appear.

TABLE 27.—SHOWING DEATHS IN NEW JERSEY FROM DIPHTHERIA WITH AGES OF DECEDENTS, FOR YEAR ENDING DECEMBER 31, 1910.

AGE PERIODS.	Deaths from Diphtheria.	AGE PERIODS.	Deaths from Diphtheria.	AGE PERIODS.	Deaths from Diphtheria.
Under 1 month.....		25 to 30.....	2	60 to 70.....	
Under 1 year.....	34	30 to 35.....	2	70 to 80.....	
1 to 5.....	437	35 to 40.....	1	80 to 90.....	1
5 to 10.....	182	40 to 45.....	1	Over 90.....	
10 to 15.....	33	45 to 50.....	1	Not stated.....	
15 to 20.....	5	50 to 55.....	2	Total.....	728
20 to 25.....	7	55 to 60.....			

CHART SHOWING DEATHS FROM DIPHTHERIA PER 10,000 POPULATION, IN NEW JERSEY, FOR THE THIRTY-TWO YEARS ENDING DECEMBER 31, 1910.



TYPHOID FEVER.

The death-rate from typhoid fever for the year ending December 31st, 1910, was 1.55 per 10,000 inhabitants, a slight increase over the previous year; however, these figures are below the average death-rate from this disease for the past ten years, which is 1.78 per 10,000 inhabitants.

It will be noticed by referring to table 28 that the annual death-rate from typhoid fever in the various registration states and cities throughout the country is much higher than in New Jersey.

Continued efforts are being made by the State Board of Health to regulate the sale and distribution of milk, to purify the various water supplies throughout the State, to require the purification of sewage, and other precautionary measures to prevent the spread of typhoid fever.

TABLE 28.—SHOWING COMPARATIVE DEATH-RATES FROM TYPHOID FEVER, PER 10,000 INHABITANTS, IN THE REGISTRATION AREA OF THE UNITED STATES AND IN NEW JERSEY, FOR THE TEN YEARS ENDING DECEMBER 31, 1910.

Registration area of United States.....	DEATHS FROM TYPHOID FEVER, PER 10,000 INHABITANTS.										
	Annual average, 1901-1910.	1901.	1902.	1903.	1904.	1905.	1906.	1907.	1908.	1909.	1910.
New Jersey.....	1.78	1.83	2.17	1.92	1.87	1.68	1.86	2.06	1.60	1.28	1.55

TABLE 29.—SHOWING DEATHS PER 10,000 POPULATION FROM TYPHOID FEVER IN NEW JERSEY FOR THIRTY-TWO YEARS.

YEAR.	Population.*	Number of deaths from typhoid fever.	Deaths from typhoid fever, per 10,000 inhabitants.	YEAR.	Population.*	Number of deaths from typhoid fever.	Deaths from typhoid fever, per 10,000 inhabitants.
1879.....	1,020,884	324	3.17	1885.....	1,672,942	568	3.39
1880.....	1,130,892	373	3.29	1886.....	1,718,543	377	2.23
1881.....	1,160,273	574	4.94	1887.....	1,764,141	478	2.70
1882.....	1,139,658	884	7.73	1888.....	1,810,098	450	2.48
1883.....	1,209,048	564	4.65	1889.....	1,855,872	486	2.62
1884.....	1,248,224	640	5.12	1890.....	1,885,669	356	1.87
1885.....	1,378,033	642	5.02	1901.....	1,925,781	332	1.98
1886.....	1,310,431	545	4.15	1902.....	1,967,893	428	2.17
1887.....	1,842,820	322	3.88	1903.....	2,016,797	388	1.92
1888.....	1,875,227	620	4.50	1904.....	2,058,909	384	1.87
1889.....	1,407,625	724	5.14	1905.....	2,144,143	369	1.68
1890.....	1,441,017	782	5.42	1906.....	2,196,238	408	1.86
1891.....	1,478,784	695	4.69	1907.....	2,248,331	464	2.06
1892.....	1,511,633	623	3.15	1908.....	2,300,427	367	1.60
1893.....	1,538,799	506	3.28	1909.....	2,352,522	301	1.28
1894.....	1,578,373	485	3.07	1910.....	2,337,167	392	1.55

* Population estimated except for census years.

TABLE 30.—SHOWING DEATHS FROM TYPHOID FEVER IN NEW JERSEY, PER 10,000 POPULATION, BY COUNTIES, FOR THE TEN YEARS ENDING DECEMBER 31, 1910, WITH AVERAGES FOR TEN YEARS.

COUNTIES.	YEARS.										Average for 10 years.
	1901.	1902.	1903.	1904.	1905.	1906.	1907.	1908.	1909.	1910.	
Atlantic County.....	2.67	2.74	2.81	1.97	2.01	1.60	2.30	1.62	1.13	1.53	2.04
Bergen County.....	.99	1.08	1.16	1.24	1.10	1.15	1.29	.71	.85	1.16	1.07
Burlington County.....	2.58	2.23	3.61	2.89	2.58	3.18	4.41	4.04	2.00	3.31	3.08
Camden County.....	2.11	2.43	1.07	2.46	1.81	2.98	2.99	2.00	1.28	1.97	2.11
Cape May County.....	2.26	.60	.75	.....	1.73	1.65	2.62	.50	1.45	1.52	1.31
Cumberland County.....	1.94	2.32	.96	2.29	2.88	1.15	2.29	1.71	1.32	1.99	1.89
Houcouster County.....	1.93	2.12	2.04	1.41	1.39	1.79	2.00	1.16	1.22	1.21	1.63
Hudson County.....	1.74	1.86	1.66	1.54	1.16	3.14	1.41	1.39	1.09	1.61	1.85
Hunterdon County.....	1.45	2.03	1.74	1.45	.90	1.80	2.44	1.11	.78	.98	1.60
Mercer County.....	1.75	6.04	5.14	3.57	2.35	3.26	6.69	4.43	3.10	4.14	4.08
Middlesex County.....	1.47	1.95	1.05	2.63	1.55	.70	1.92	1.68	1.17	.96	1.51
Monmouth County.....	1.92	2.36	1.53	1.61	2.21	2.47	1.99	2.41	1.14	2.22	2.17
Morris County.....	1.06	1.21	1.75	1.00	1.75	1.01	.72	1.54	1.34	1.34	1.32
Ocean County.....	1.00	2.98	.49	2.43	3.35	.35	1.41	.....	.....	.....	1.68
Passaic County.....	2.19	2.50	2.02	2.78	1.14	1.33	1.19	1.06	.99	1.16	1.43
Salem County.....	1.96	1.96	.86	3.53	2.28	3.03	1.51	2.62	1.49	1.48	1.99
Somerset County.....	.60	.59	1.16	.86	2.48	1.35	.27	2.35	2.31	1.80	1.38
Sussex County.....	.41	2.51	.80	1.97	.43	1.71	1.29	3.04	1.32	1.57	1.63
Union County.....	2.64	2.57	2.32	1.90	1.37	1.66	1.37	2.19	1.67	1.71	1.93
Warren County.....	1.85	4.74	1.05	2.35	1.73	1.95	1.43	.71	1.18	2.78	1.68
The State.....	1.83	2.17	1.92	1.87	1.68	1.86	2.06	1.60	1.28	1.55	1.78

TABLE 31.—SHOWING DEATHS FROM TYPHOID FEVER IN NEW JERSEY, FOR YEAR ENDING DECEMBER 31, 1910, AND SHOWING ALSO THE NUMBER OF DEATHS FROM THIS DISEASE IN URBAN AND RURAL DISTRICTS, TOGETHER WITH POPULATION AND DEATHS PER 10,000 INHABITANTS.

	Aggregate population.	Deaths from typhoid fever.	Deaths from typhoid fever per 10,000 population.
State.....	2,537,167	392	1.55
Cities.....	1,742,534	275	1.58
Rural Districts.....	794,633	117	1.47

TABLE 32.—DEATHS FROM TYPHOID FEVER IN NEW JERSEY, BY AGE PERIODS, FOR TEN YEARS.

YEARS.	AGE PERIODS.											Totals.
	Under 1 year.	1 to 10	10 to 20	20 to 30	30 to 40	40 to 50	50 to 60	60 to 70	70 to 80	Over 80	Not stated.	
1901.....	2	35	57	107	74	36	17	13	9	1	1	352
1902.....	1	25	72	124	92	53	33	18	8	1	1	428
1903.....	3	26	77	108	88	49	19	17	.....	.....	.....	388
1904.....	2	24	77	108	83	31	16	5	.....	.....	1	388
1905.....	3	33	73	86	65	49	23	16	5	3	.....	384
1906.....	1	34	85	110	67	59	28	11	10	3	.....	360
1907.....	.....	22	95	149	93	61	27	11	4	2	.....	464
1908.....	3	36	71	96	73	39	25	16	6	2	.....	367
1909.....	3	20	68	68	59	47	23	7	6	.....	.....	301
1910.....	1	22	71	108	85	53	32	13	6	1	.....	392
Totals.....	24	277	741	1,064	779	477	267	188	60	14	3	3,844

TABLE 33.—SANITARY DISTRICTS IN NEW JERSEY IN WHICH DEATHS FROM TYPHOID FEVER OCCURRED DURING THE YEAR ENDING DECEMBER 31, 1910, WITH POPULATION, NUMBER OF DEATHS, SOURCE OF WATER SUPPLY AND NATURE OF DRAINAGE.

NAME OF SANITARY DISTRICT.	Population, census 1910.	Number of deaths from typhoid fever.	Water-supply.	Drainage.
Aquackanonk Township.	11,869	2	Domestic.	No sewers.
Atlantic City	46,150	9	Public.	Sewers.
Atlantic Township	1,205	1	Domestic.	No sewers.
Atlantic Highlands Borough	1,645	1	Public.	Sewers.
Bayonne	55,545	2	Public.	Sewers.
Belvidere City	1,764	1	Public.	Sewers.
Beverly Township	2,337	4	Public.	No sewers.
Boonton City	4,930	1	Public.	No sewers.
Bound Brook Borough	3,970	2	Public.	Sewers.
Branchville Borough	663	1	Public.	No sewers.
Bridgeton	14,409	2	Public.	No sewers.
Burlington City	8,336	2	Public.	No sewers.
Butler Borough	2,265	1	Public.	No sewers.
Camden City	94,538	15	Public.	Sewers.
Cedar Grove Township	2,409	2	Public.	No sewers.
Centre Township	3,200	2	Domestic.	No sewers.
Cinnaminson Township.	1,266	2	Public.	No sewers.
Clayton Borough	1,926	1	Public.	No sewers.
Cranford Township	3,741	1	Public.	Sewers.
Deerfield Township	3,311	2	Domestic.	No sewers.
Dover Township	7,468	1	Domestic.	No sewers.
East Amwell Township	1,203	1	Domestic.	No sewers.
East Brunswick	1,602	2	Partial.	No sewers.
Edgewater	2,855	1	Public.	Sewers.
Elizabeth	73,409	14	Public.	Sewers.
Englewood	9,924	3	Public.	Sewers.
Fairfield Township	1,629	1	Domestic.	No sewers.
Fairview Borough	2,441	1	Public.	Sewers.
Florence Township	4,731	3	Domestic.	Sewers.
Franklin Township (Gloucester County)	2,603	1	Domestic.	No sewers.
Franklin Township (Warren County)	1,585	2	Domestic.	No sewers.
Freehold Borough	3,233	1	Public.	Sewers.
Galloway Township	1,976	1	Domestic.	No sewers.
Garfield	10,213	1	Public.	Sewers.
Glassboro Township	2,821	4	Public.	No sewers.
Gloucester City	9,462	6	Public.	Sewers.
Hackensack	14,050	4	Public.	Sewers.
Haddonfield	4,142	1	Public.	Sewers.
Haddon Heights Borough.	1,432	2	Public.	Sewers.
Hammononton	5,088	1	Public.	Sewers.
Hardyston	5,210	3	Domestic.	No sewers.
Harrison	14,498	1	Public.	Sewers.
Hawthorne	588	3	Domestic.	Sewers.
Hoboken	70,424	12	Public.	Sewers.
Holland Township	1,639	1	Partial.	No sewers.
Holmdel Township	1,058	1	Domestic.	No sewers.
Irrington	11,877	1	Public.	Sewers.
Jackson Township	1,325	1	Domestic.	No sewers.
Jersey City	267,779	31	Public.	Sewers.
Lakewood Township	5,149	1	Public.	Sewers.
Lawrence Township	2,522	1	Domestic.	No sewers.
Lebanon Township	2,179	2	Domestic.	No sewers.
Linden Borough	610	1	Public.	Sewers.
Little Egg Harbor Township	388	1	Partial.	No sewers.
Little Falls Township	3,750	1	Public.	No sewers.
Little Ferry Borough	2,541	1	Public.	Sewers.
Long Branch	13,298	9	Public.	Sewers.
Lower Township	1,188	1	Domestic.	No sewers.
Lower Alloways Creek	1,252	1	Domestic.	No sewers.
Lower Penn's Neck	1,544	1	Domestic.	No sewers.
Madison Borough	4,655	1	Public.	Sewers.
Manchester Township	1,112	1	Domestic.	No sewers.

TABLE 33.—SANITARY DISTRICTS IN NEW JERSEY IN WHICH DEATHS FROM TYPHOID FEVER OCCURRED DURING THE YEAR ENDING DECEMBER 31, 1910, WITH POPULATION, NUMBER OF DEATHS, SOURCE OF WATER SUPPLY AND NATURE OF DRAINAGE.—Continued.

NAME OF SANITARY DISTRICT.	Population, census 1910.	Number of deaths from typhoid fever.	Water-supply.	Drainage.
Marlboro Township	1,754	2	Domestic.	No sewers.
Maurice River Township.	2,124	2	Domestic.	No sewers.
Medford Township	1,903	1	Domestic.	Sewers.
Merchantville	1,996	1	Public.	Sewers.
Middle Township	2,974	1	Domestic.	No sewers.
Millstone Township	1,461	1	Domestic.	Sewers.
Millville	14,209	2	Public.	No sewers.
Montgomery Township	1,637	2	Domestic.	No sewers.
Morrisstown	12,507	1	Public.	Sewers.
Mt. Laurel Township	1,573	1	Domestic.	No sewers.
Neptune Township	8,621	1	Public.	Sewers.
Newark	347,469	51	Public.	Sewers.
New Brunswick	23,388	3	Public.	Sewers.
Northampton Township	5,652	5	Public.	Sewers.
North Bergen	15,662	1	Public.	No sewers.
North Hanover	696	1	Domestic.	No sewers.
Nutley Borough	6,009	1	Public.	No sewers.
Ocean City Borough	1,950	1	Public.	Sewers.
Orange	29,630	6	Public.	Sewers.
Oxford Township	3,444	1	Domestic.	No sewers.
Passaic City	54,773	9	Public.	Sewers.
Paterson	125,000	10	Public.	Sewers.
Pensauken Township	4,169	1	Domestic.	No sewers.
Perth Amboy	32,121	2	Public.	Sewers.
Phillipsburg	13,903	6	Public.	Sewers.
Pittsgrove Township	2,394	1	Domestic.	No sewers.
Plainfield	20,550	3	Public.	Sewers.
Pohatcong Township	3,202	2	Partial.	No sewers.
Princeton	5,136	1	Public.	Sewers.
Rahway	9,337	2	Public.	Sewers.
Readington Township	2,569	1	Domestic.	No sewers.
Red Bank	7,398	3	Public.	Sewers.
Ridgewood Township	5,416	1	Public.	Sewers.
Salem City	6,614	1	Public.	Sewers.
Somerville Borough	5,060	3	Public.	Sewers.
Southampton Township	1,778	1	Partial.	No sewers.
South Orange Borough	6,614	1	Public.	Sewers.
South Orange Township	2,979	1	Public.	Sewers.
Summit	7,500	2	Public.	Sewers.
Trenton	96,815	50	Public.	Sewers.
Union Township (Bergen County)	4,076	1	Public.	No sewers.
Union Township (Ocean County)	982	2	Partial.	No sewers.
Union Township (Union County)	3,419	1	Public.	Sewers.
Vernon Township	1,675	1	Domestic.	No sewers.
Voorhees Township	1,174	1	Domestic.	No sewers.
Wall Township	3,817	1	Domestic.	No sewers.
Weehawken Township	11,228	7	Public.	Sewers.
West New York	13,569	1	Public.	Sewers.
Westwood Borough	1,870	1	Public.	Sewers.
Winslow Township	2,919	1	Domestic.	No sewers.
Woodbridge Township	8,948	2	Public.	Sewers.

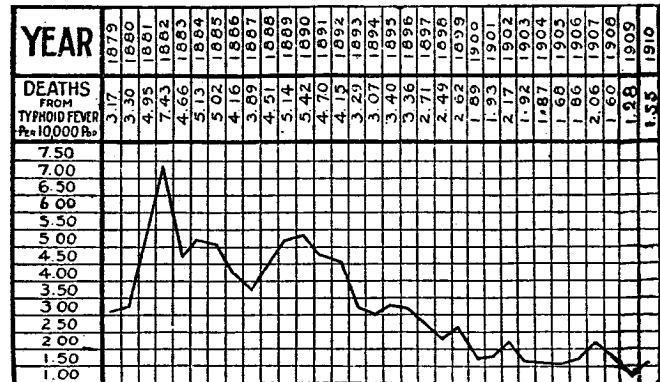
TABLE 34.—DEATHS FROM SCARLET FEVER, DIPHTHERIA AND TYPHOID FEVER IN NEW JERSEY FOR THE THIRTY-TWO YEARS ENDING DECEMBER 31, 1910, COMPARED WITH TOTAL DEATHS.

YEARS.	Population.	Total deaths.	Death-rate per 1,000 population.	SCARLET FEVER		DIPHTHERIA.		TYPHOID FEVER.	
				Number of deaths.	Death-rate per 1,000 population.	Number of deaths.	Death-rate per 1,000 population.	Number of deaths.	Death-rate per 1,000 population.
1879.....		20,440	18.07	627	.61	1,100	1.09	324	.32
1880.....	1,130,892	18,967	16.77	578	.51	872	.77	373	.33
1881.....	20,810	18.39	499	.43	1,128	.97	574	.49	
1882.....	25,910	22.90	1,806	1.01	1,472	1.24	884	.74	
1883.....	23,310	20.60	858	.71	1,146	.95	564	.47	
1884.....	21,716	19.20	547	.44	1,027	.82	640	.51	
1885.....	1,278,088	23,807	18.63	646	.51	1,496	1.17	642	.50
1886.....	22,734	17.80	222	.17	1,303	.99	545	.42	
1887.....	24,331	19.04	255	.19	1,327	1.14	522	.49	
1888.....	27,173	17.01	574	.42	2,686	1.48	620	.45	
1889.....	26,343	18.99	533	.38	1,574	1.12	724	.51	
1890.....	28,330	19.80	209	.15	1,575	1.09	782	.54	
1891.....	1,441,017	28,840	19.50	288	.19	1,737	1.17	695	.47
1892.....		32,685	21.62	1,008	.67	1,776	1.17	628	.42
1893.....		30,896	19.88	445	.29	1,677	1.09	506	.33
1894.....		30,004	19.09	272	.17	1,294	.82	465	.31
1895.....	1,672,942	30,634	18.31	264	.16	1,464	.88	568	.34
1896.....		30,767	17.90	183	.11	1,738	1.02	577	.34
1897.....		29,822	16.90	203	.12	1,382	.78	473	.27
1898.....		27,337	15.11	201	.11	950	.52	450	.25
1899.....		33,959	16.70	187	.10	777	.42	486	.26
1900.....	1,883,669	31,474	16.62	185	.10	927	.49	356	.19
1901.....		31,739	16.48	179	.09	683	.36	352	.19
1902.....		31,319	15.91	217	.11	683	.35	428	.22
1903.....		31,820	15.78	299	.15	748	.37	383	.19
1904.....		33,288	17.14	416	.20	918	.45	384	.19
1905.....	2,144,143	33,864	15.79	164	.07	629	.33	463	.19
1906.....		33,670	16.24	193	.09	673	.31	463	.19
1907.....		37,408	16.63	286	.13	682	.29	464	.21
1908.....		35,597	15.47	396	.17	585	.23	367	.16
1909.....		36,359	15.46	338	.14	610	.26	301	.13
1910.....	2,537,167	39,494	15.57	220	.09	728	.29	392	.16

TABLE 35.—SHOWING DEATHS FROM TYPHOID FEVER AND DEATHS PER 10,000 INHABITANTS FROM TYPHOID FEVER IN THE COUNTIES OF NEW JERSEY FOR YEAR ENDING DECEMBER 31, 1910, ALSO CHART SHOWING DEATHS FROM TYPHOID FEVER PER 10,000 INHABITANTS IN THE COUNTIES OF NEW JERSEY FOR SAME PERIOD.

NAMES OF COUNTIES.	Number of deaths from typhoid fever.	Deaths from typhoid fever per 10,000 inhabitants.	Chart showing deaths from typhoid fever per 10,000 inhabitants.
Atlantic County.....	11	1.53	1.53
Bergen County.....	16	1.16	1.16
Burlington County.....	22	3.31	3.31
Camden County.....	28	1.97	1.97
Cape May County.....	3	1.52	1.52
Cumberland County.....	11	1.99	1.99
Essex County.....	62	1.21	1.21
Gloucester County.....	6	1.61	1.61
Hudson County.....	50	.98	.98
Hunterdon County.....	5	1.49	1.49
Mercer County.....	52	4.14	4.14
Middlesex County.....	11	.96	.96
Monmouth County.....	21	2.22	2.22
Morris County.....	10	1.34	1.34
Ocean County.....	7	3.28	3.28
Passaic County.....	25	1.16	1.16
Salem County.....	4	1.48	1.48
Somerset County.....	7	1.80	1.80
Sussex County.....	5	1.87	1.87
Union County.....	24	1.71	1.71
Warren County.....	12	2.78	2.78

CHART SHOWING DEATHS FROM TYPHOID FEVER IN NEW JERSEY, PER 10,000 POPULATION FOR THIRTY-TWO YEARS.



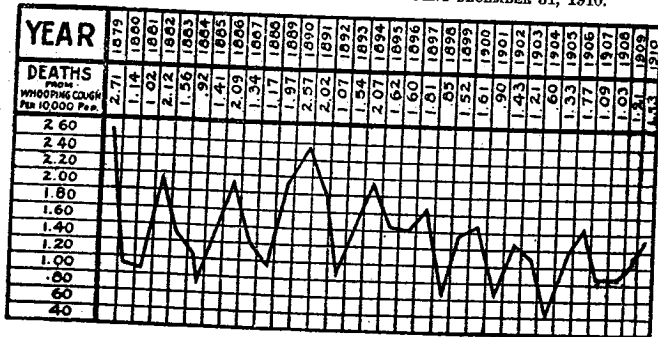
WHOOPIING COUGH.

For the year ending December 31st, 1910, 389 deaths from whooping cough took place in New Jersey, and the death-rate per 10,000 population for the year was 1.53. It will be shown by the accompanying chart that periodical outbreaks of this disease have occurred at various intervals during the past thirty years; however, the death-rate for the past fifteen years is less than for the fifteen years preceding.

TABLE 36.—SHOWING DEATHS IN NEW JERSEY FROM WHOOPING COUGH, WITH AGES OF DECEDEENTS, FOR YEAR ENDING DECEMBER 31, 1910.

AGE PERIODS.	Deaths from whooping cough.	AGE PERIODS.	Deaths from whooping cough.	AGE PERIODS.	Deaths from whooping cough.
Under 1 month.....	23	20 to 25.....	1	50 to 55.....	
Under 1 year.....	14	25 to 30.....	1	55 to 60.....	
1 to 5.....	169	30 to 35.....		60 to 70.....	
5 to 10.....	10	35 to 40.....		70 to 80.....	1
10 to 15.....		40 to 45.....		80 to 90.....	
15 to 20.....		45 to 50.....		Over 90.....	
				Total.....	389

CHART SHOWING DEATHS FROM WHOOPING COUGH IN NEW JERSEY, PER 10,000 POPULATION, FOR THE THIRTY-TWO YEARS ENDING DECEMBER 31, 1910.



SCARLET FEVER.

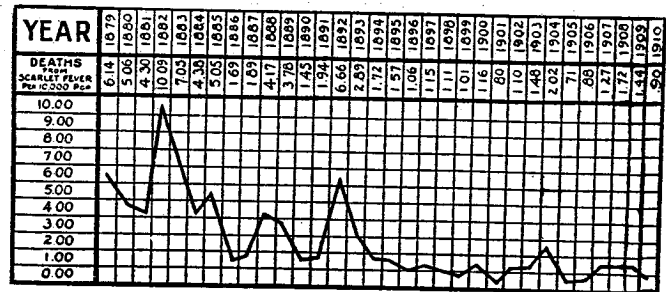
The number of deaths from scarlet fever for the calendar year 1910 was 229, and the death-rate per 10,000 inhabitants .90, which is the lowest death-rate during the past four years.

It is important that all physicians promptly report cases of scarlet fever, and other communicable diseases occurring in their practice, to the local board of health, in order that proper investigation may be made and precautions taken to prevent the spread of the same.

TABLE 37.—SHOWING DEATHS IN NEW JERSEY FROM SCARLET FEVER WITH AGE AT DEATH, FOR YEAR ENDING DECEMBER 31, 1910.

AGE PERIODS.	Deaths from scarlet fever.	AGE PERIODS.	Deaths from scarlet fever.	AGE PERIODS.	Deaths from scarlet fever.
Under 1 month.....	1	25 to 30.....	5	60 to 70.....	
Under 1 year.....	10	30 to 35.....	4	70 to 80.....	
1 to 5.....	109	35 to 40.....	1	80 to 90.....	
5 to 10.....	54	40 to 45.....		Over 90.....	
10 to 15.....	21	45 to 50.....			
15 to 20.....	12	50 to 55.....			
20 to 25.....	12	55 to 60.....		Total.....	229

CHART SHOWING DEATHS FROM SCARLET FEVER IN NEW JERSEY, PER 10,000 POPULATION, FOR THIRTY-TWO YEARS.



MEASLES.

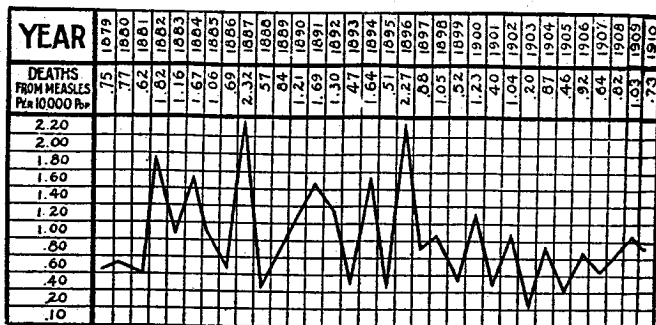
Deaths from measles for the year ending December 31st, 1910, show a decrease from the previous year. There is very little change in the average death-rate from this disease, and the precautions necessary to prevent its spread are well known to local boards of health.

Measles is a most serious disease of childhood, and it is important that cases of the same be carefully reported, as prompt and decisive action is necessary to prevent local epidemics.

TABLE 38.—SHOWING DEATHS IN NEW JERSEY FROM MEASLES, WITH AGE AT DEATH, FOR YEAR ENDING DECEMBER 31, 1910.

AGE PERIODS.	Deaths from measles.	AGE PERIODS.	Deaths from measles.	AGE PERIODS.	Deaths from measles.
Under 1 month.....	5	25 to 30.....	1	60 to 70.....	1
Under 1 year.....	40	30 to 35.....		70 to 80.....	
1 to 5.....	118	35 to 40.....	1	80 to 90.....	
5 to 10.....	14	40 to 45.....		Over 90.....	
10 to 15.....	2	45 to 50.....			
15 to 20.....	4	50 to 55.....			
20 to 25.....		55 to 60.....			
				Total.....	186

CHART SHOWING DEATHS IN NEW JERSEY FROM MEASLES, PER 10,000 POPULATION FOR THIRTY-TWO YEARS ENDING DECEMBER 31, 1910.



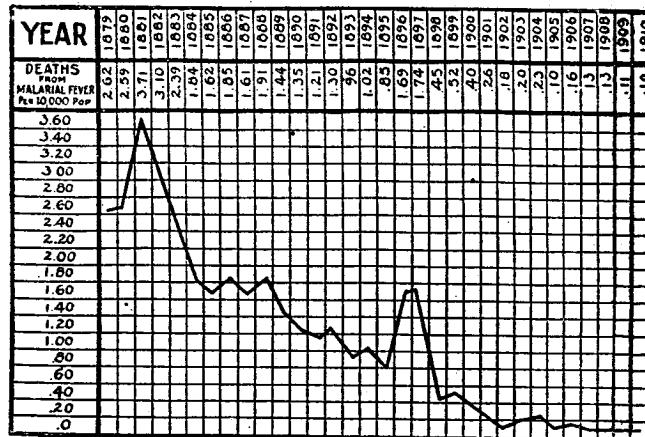
MALARIAL FEVER.

The number of deaths from malarial fever for the calendar year 1910 was 25, the same number as occurred the previous year. By referring to table 39 and also the accompanying chart in reference to malarial fever it will be shown that during the past thirty years there has been a decided decrease in the number of deaths from this disease.

TABLE 39.—SHOWING DEATHS IN NEW JERSEY FROM MALARIAL FEVER FOR THIRTY-TWO YEARS.

YEARS.	Deaths from malarial fever.	YEARS.	Deaths from malarial fever.	YEARS.	Deaths from malarial fever.
1870.....	268	1890.....	195	1910.....	50
1880.....	293	1891.....	180	1902.....	36
1881.....	431	1892.....	198	1903.....	40
1882.....	379	1893.....	148	1904.....	47
1883.....	290	1894.....	162	1905.....	21
1884.....	230	1895.....	144	1906.....	33
1885.....	209	1896.....	119	1907.....	29
1886.....	243	1897.....	132	1908.....	30
1887.....	217	1898.....	82	1909.....	25
1888.....	264	1899.....	96		25
1889.....	203	1900.....	84		

CHART SHOWING DEATHS FROM MALARIAL AFFECTIONS, PER 10,000 INHABITANTS, IN NEW JERSEY, FOR THIRTY-TWO YEARS.



SMALL-POX.

No deaths from small-pox are reported as having occurred in this State for the year 1910, and in fact New Jersey has been particularly free from any serious epidemic of this disease for several years. It is important that local boards of health require vaccination, and if one or more cases of the disease appear in any community, revaccination of all those who have come in contact with any person having the disease should be required.

TABLE 40.—SHOWING DEATHS IN NEW JERSEY FROM SMALL-POX FOR THIRTY-TWO YEARS.

YEARS.	Deaths from small-pox.	YEARS.	Deaths from small-pox.	YEARS.	Deaths from small-pox.
1879	...	1890	...	1901	142
1880	15	1891	...	1902	432
1881	254	1892	38	1903	16
1882	367	1893	43	1904	24
1883	54	1894	11	1905	1
1884	7	1895	23	1906	1
1885	2	1896	2	1907	1
1886	4	1897	...	1908	...
1887	5	1898	...	1909	2
1888	5	1899	...	1910	...
1889	3	1900	5		

CANCER.

The number of deaths from cancer for the calendar year 1910 was 1,838, and the death-rate per 10,000 inhabitants, 7.24. The following tables and chart show a gradual increase in the number of deaths from this disease in New Jersey for the past thirty-two years.

TABLE 41.—SHOWING DEATHS FROM CANCER IN NEW JERSEY FOR THIRTY-TWO YEARS.

YEARS.	1879.	1880.	1881.	1882.	1883.	1884.	1885.	1886.	1887.	1888.
Deaths from cancer.....	378	425	451	402	461	484	498	546	574	612
Deaths from cancer per 10,000 population.....	3.70	3.75	3.88	3.87	3.81	3.87	3.89	4.15	4.21	4.45

YEARS.	1889.	1890.	1891.	1892.	1893.	1894.	1895.	1896.	1897.	1898.	1899.
Deaths from cancer.....	579	640	642	688	723	731	770	811	857	852	946
Deaths from cancer per 10,000 population.....	4.11	4.41	4.34	4.55	4.69	4.63	4.60	4.71	4.33	4.70	5.10

YEARS.	1900.	1901.	1902.	1903.	1904.	1905.	1906.	1907.	1908.	1909.	1910.
Deaths from cancer.....	921	1,042	1,031	1,132	1,125	1,232	1,389	1,466	1,535	1,663	1,838
Deaths from cancer per 10,000 population.....	4.84	5.43	5.24	5.61	5.46	5.98	6.32	6.52	6.67	7.07	7.24

TABLE 42.—DEATHS FROM CANCER IN NEW JERSEY, BY AGE PERIODS, FOR TEN YEARS.

YEARS.	AGE PERIODS.											Totals.
	Under 1 year.	1 to 10	10 to 20	20 to 30	30 to 40	40 to 50	50 to 60	60 to 70	70 to 80	Over 80	Not stated.	
1901	1	6	9	19	85	196	290	240	150	47	1	1,043
1902	1	7	5	24	92	190	322	216	136	31	7	1,031
1903	...	10	2	22	79	179	293	303	177	57	5	1,132
1904	7	5	9	21	81	168	286	302	199	47	...	1,125
1905	6	15	11	22	87	239	294	353	199	64	1	1,282
1906	2	12	6	25	104	241	350	350	225	74	...	1,399
1907	1	8	14	28	91	244	377	369	262	77	...	1,466
1908	1	13	9	27	118	260	377	414	236	80	...	1,535
1909	2	9	4	26	104	260	437	435	282	104	...	1,663
1910	2	14	10	32	106	299	462	499	316	98	...	1,838

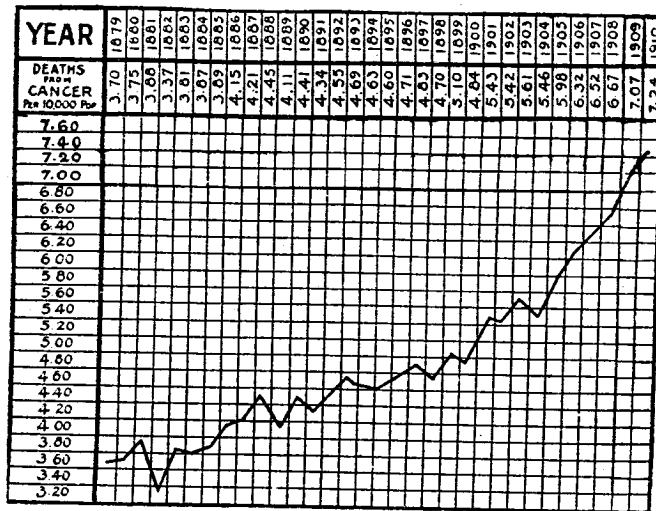
TABLE 43.—DEATHS FROM CANCER IN NEW JERSEY, SHOWING ORGANS AFFECTED AND AGE AT DEATH, FOR THE YEAR ENDING DECEMBER 31, 1910.

CANCER.	Under 1 month.	Under 1 year.										Over 90	Age not stated.	Totals.			
	1 to 5	5 to 10	10 to 15	15 to 20	20 to 25	25 to 30	30 to 35	35 to 40	40 to 45	45 to 50	50 to 55				55 to 60	60 to 70	70 to 80	80 to 90
Of the mouth.....	2	...	1	1	1	6	6	10	16	18	16	12	1	...	90		
Of the stomach and liver.....	4	...	2	4	9	11	26	45	69	99	108	264	151	37	5	834	
Of the intestines and rectum.....	1	...	4	2	3	5	16	16	21	19	61	39	6	...	193		
Of the female genital organs.....	1	...	1	6	13	23	38	42	54	49	74	42	8	...	350		
Of the breast.....	...	...	1	2	6	7	15	20	24	24	40	22	11	4	175
Of the skin.....	2	1	...	...	...	1	...	...	2	2	9	7	6	...	28
Others.....	2	3	3	1	5	3	1	6	3	12	14	12	22	33	39	8	167
Totals.....	2	11	3	2	8	12	20	40	66	132	167	222	240	499	316	88	1,838

TABLE 44.—DEATHS FROM CANCER IN NEW JERSEY FOR THE YEAR ENDING DECEMBER 31, 1910, PER 10,000 POPULATION, BY COUNTIES AND BY CITIES OF OVER 5,000 INHABITANTS.

NAME OF PLACE.	Deaths from cancer.	Deaths per 10,000 population.
Atlantic County	18	6.99
Atlantic City	41	8.88
Bergen County	54	5.38
Englewood	3	3.92
Garfield	1	9.98
Hackensack	6	4.27
Rutherford	4	5.68
Burlington County	58	10.74
Bordentown	4	9.41
Burlington City	1	9.60
Camden County	8	5.00
Camden City	19	7.19
Gloucester City	68	9.17
Cape May County	3	6.20
Cumberland County	21	10.63
Bridgeton	24	8.42
Millsville	10	7.04
Essex County	9	7.23
Bloomfield	22	5.25
East Orange	6	3.98
Irvington	29	8.44
Montclair	10	8.42
Newark	14	6.50
Orange	286	8.22
West Orange	34	11.47
Gloucester County	6	5.46
Hudson County	34	9.10
Bayonne	28	6.92
Harrison	28	5.04
Hoboken	10	6.90
Jersey City	58	7.96
Kearny	176	6.57
Town of Union	10	5.36
West Hoboken	14	6.68
West New York	27	7.63
Hunterdon County	8	5.90
Lambertville	33	11.41
Mercer County	5	10.74
Princeton	15	6.33
Trenton	3	5.84
Middlesex County	69	7.13
New Brunswick	21	4.05
Perth Amboy	32	13.08
South Amboy	12	3.74
Monmouth County	5	7.14
Asbury Park	47	7.36
Long Branch	4	4.93
Red Bank	13	13.54
Morris County	10	13.52
Dover town	34	6.21
Morristown	6	8.03
Ocean County	16	12.79
Passaic County	17	7.97
Passaic City	20	5.63
Paterson	32	5.81
Salem County	30	6.37
Salem City	7	3.43
Somerset County	5	7.56
North Plainfield	30	9.17
Sussex County	2	3.27
Union County	28	10.46
Elizabeth	17	7.40
Plainfield	53	7.22
Rahway	20	9.73
Summit	8	8.37
Westfield	8	10.67
Warren County	4	6.23
Phillipsburg	19	6.49
	8	5.73
Total in cities of over 5,000 inhabitants	1,272	
Total for State	1,838	
Rate per 10,000 population (State)		7.24

CHART SHOWING DEATHS IN NEW JERSEY FROM CANCER, PER 10,000 POPULATION, FOR THIRTY-TWO YEARS, 1879-1910.



SUICIDE.

The number of deaths from suicide for the year was 444, an increase of 12 over the previous year. The tables which follow show the number of suicides in New Jersey for the past ten years, and also the nationality and means of suicide, covering the deaths which occurred during the calendar year 1910.

TABLE 45.—SHOWING DEATHS IN NEW JERSEY FROM SUICIDE FOR TEN YEARS, 1901-1910.

YEARS.	Deaths from suicide.	YEARS.	Deaths from suicide.
1901	265	1906	338
1902	271	1907	387
1903	314	1908	448
1904	330	1909	432
1905	354	1910	444

TABLE 46.—DEATHS IN NEW JERSEY FROM SUICIDE, SHOWING MODE OF DEATH AND AGE AT DEATH, FOR THE YEAR ENDING DECEMBER 31, 1910.

MODE OF DEATH.	AGE AT DEATH.														Totals			
	1 to 5	5 to 10	10 to 15	15 to 20	20 to 25	25 to 30	30 to 35	35 to 40	40 to 45	45 to 50	50 to 55	55 to 60	60 to 70	70 to 80		80 to 90	Over 90	Not stated.
By poison.....																		128
By asphyxia.....																		72
By strangulation.....																		67
By drowning.....																		22
By firearms.....																		121
By cutting instruments.....																		25
By precipitation from height.....																		8
By crushing.....																		5
Others.....																		1
Totals.....	2	1	3	19	43	27	40	55	49	43	43	37	51	25	4	2	444	

TABLE 47.—SHOWING NUMBER OF DEATHS BY SUICIDE RECORDED IN NEW JERSEY, BY CITIES, AND BY COUNTIES, EXCLUSIVE OF CITIES, FOR THE YEAR ENDING DECEMBER 31, 1910.

NAME OF PLACE.	COUNTRY OF BIRTH.											Total.		
	United States.	England.	France.	Germany.	Ireland.	Italy.	Scotland.	Hungary.	Sweden.	Russia.	Holland.		Other foreign.	Not stated.
Atlantic County.....														4
Atlantic City.....	11	1	1											14
Bergen County.....														21
Englewood.....														1
Garfield.....														1
Hackensack.....														1
Rutherford.....	1													1
Burlington County.....														2
Bordentown.....														4
Burlington.....	1													1
Camden County.....														3
Camden City.....	8													8
Gloucester City.....														1
Gloucester City.....														13
Cape May County.....	1													1
Cumberland County.....														1
Bridgeton.....	1													1
Essex County.....														2
Essex.....	2													2
Bloomfield.....	1													1
East Orange.....	4													6
Irvington.....	4													1
Montclair.....	3													5
Monterey.....	4													5
Newark.....	2													8
Newark.....	27	3												69
Orange.....	3													5
West Orange.....														3
Gloucester County.....														2
Hudson County.....														2
Bayonne.....	2													13
Harrison.....														2
Hoboken.....	5													1
Jersey City.....	37	3												19
Kearny.....	3													1
Town of Union.....	3													3
West Hoboken.....	1													6
West New York.....	1	1												5
Hunterdon County.....														3
Lambertville.....														5
Mercer County.....														3
Princeton.....														3
Trenton.....	9													2
Middlesex County.....														8
New Brunswick.....	3													22
Perth Amboy.....	2													8
South Amboy.....	1													5
Monmouth County.....														1
Asbury Park.....	2													6
Long Branch.....	1													2
Red Bank.....														1
Morris County.....														1
Dever.....	1													6
Morrisstown.....														1
Ocean County.....														1
Passaic County.....														1
Passaic City.....	1													5
Paterson.....	10	3												6
Salem County.....														1
Salem City.....														30
Somerset County.....														6
North Plainfield.....	1													3
Sussex County.....														1
Union County.....														2
Elizabeth.....	7	3												2
Plainfield.....	4													12
Rahway.....	1													5
Summit.....	4													1
Westfield.....	1													6
Warren County.....														2
Phillipsburg.....	2													2
Totals.....	169	15	2	58	24	10	3	18	2	10	2	6	18	444

BRIGHT'S DISEASE.

The following table shows the number of deaths from Bright's disease in New Jersey for the calendar year 1910, and also contains the figures showing the deaths from this disease in counties and certain cities of New Jersey for the past ten years.

TABLE 4S.—SHOWING NUMBER OF DEATHS FROM BRIGHT'S DISEASE IN NEW JERSEY, IN COUNTIES, EXCLUSIVE OF CITIES, AND IN CITIES OF OVER 5,000 INHABITANTS, FOR TEN YEARS.

NAMES OF COUNTIES AND CITIES.	DEATHS FROM BRIGHT'S DISEASE.									
	1901	1902	1903	1904	1905	1906	1907	1908	1909	1910
Atlantic County.....	13	14	15	21	25	21	26	25	25	27
Atlantic City.....	36	32	34	38	60	69	66	81	78	80
Bergen County.....	25	22	31	47	36	61	49	50	62	60
Englewood.....	2	5	7	5	7	5	7	11	12	10
Garfield.....	.....	.....	.....	.....	.....	.....	2	4	1	4
Hackensack.....	8	3	8	8	16	12	9	8	7	12
Rutherford.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Burlington County.....	40	28	39	47	46	46	44	75	47	67
Bordentown.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Burlington.....	9	10	12	10	12	10	14	10	13	19
Camden County.....	12	17	20	29	27	25	31	38	32	31
Camden.....	64	87	106	118	113	131	114	133	132	132
Gloucester City.....	2	5	11	6	6	7	7	15	12	17
Cape May County.....	2	7	10	12	11	22	18	15	24	21
Cumberland County.....	15	16	22	27	19	22	21	24	26	26
Bridgeton.....	11	22	24	24	13	15	19	12	21	30
Millville.....	7	5	8	12	8	8	9	15	8	8
Essex County.....	17	15	19	23	21	26	26	28	31	47
Bloomfield.....	5	6	1	5	7	9	11	10	12	8
East Orange.....	11	20	20	20	15	12	25	24	15	30
Irvington.....	1	4	8	6	.....	.....	.....	.....	.....	.....
Montclair.....	11	5	9	13	11	19	14	12	23	21
Newark.....	249	255	308	237	279	359	403	328	395	377
Orange.....	19	20	38	20	18	34	36	30	33	28
West Orange.....	7	2	7	5	7	7	7	7	6	8
Gloucester County.....	17	12	32	23	28	38	32	33	36	31
Hudson County.....	39	13	22	39	36	27	49	36	35	36
Bayonne.....	16	21	25	23	29	31	38	39	28	62
Harrison.....	3	2	7	9	9	12	12	12	9	8
Hoboken.....	41	57	78	80	75	112	111	67	47	88
Jersey City.....	140	158	179	194	236	279	293	269	299	285
Kearny.....	7	7	10	6	10	8	15	12	15	11
Town of Union.....	14	12	19	15	14	16	24	20	25	11
West Hoboken.....	21	14	12	29	23	27	40	29	28	33
West New York.....	.....	4	9	5	8	5	8	12	8	6
Hunterdon County.....	17	12	22	26	28	43	42	31	34	40
Lambertville.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Mercer County.....	6	13	9	9	8	24	18	15	13	33
Princeton.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Trenton.....	3	54	60	71	74	87	103	88	96	119
Middlesex County.....	23	15	20	18	25	25	41	32	35	35
New Brunswick.....	18	19	26	19	28	13	23	19	29	22
Perth Amboy.....	9	11	9	5	17	23	22	20	18	26
South Amboy.....	2	5	3	4	1	7	4	8	5	11
Monmouth County.....	42	50	55	57	48	62	56	50	60	80
Asbury Park.....	13	10	13	8	13	23	23	19	13	21
Long Branch.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Red Bank.....	4	2	4	3	4	4	4	7	9	11
Morris County.....	30	26	44	35	36	38	41	42	36	83
Dover.....	4	4	6	7	9	9	13	10	10	10
Morristown.....	8	12	8	13	10	10	13	14	19	9
Ocean County.....	11	12	14	13	16	16	23	12	33	24
Passaic County.....	7	6	11	9	17	14	24	20	13	23
Passaic City.....	11	15	12	21	20	31	35	45	41	33
Paterson.....	44	60	75	70	84	135	168	153	135	135
Salem County.....	14	11	16	14	9	13	16	15	17	20
Salem City.....	.....	4	5	7	9	5	7	3	7	7
Somerset County.....	17	22	17	17	19	26	21	17	25	32
North Plainfield.....	3	.....	4	.....	2	4	3	12	14	14
Sussex County.....	6	8	13	9	12	8	14	16	20	13
Union County.....	10	9	15	11	17	17	16	17	16	20
Elizabeth.....	45	28	45	50	51	73	67	59	65	50
Plainfield.....	14	15	9	15	13	22	29	20	21	28
Rahway.....	9	14	12	5	6	7	9	12	9	11
Summit.....	1	4	7	.....	.....	.....	.....	.....	.....	.....
Westfield.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Warren County.....	14	16	17	24	.....	19	37	17	29	28
Phillipsburg.....	5	4	4	8	5	14	13	9	14	9
Total.....	1,246	1,371	1,686	1,722	1,840	2,238	2,518	2,290	2,486	2,679

Report of the Division of Medical and Sanitary Inspection.

A. CLARK HUNT, M.D., CHIEF.

To the Board of Health of the State of New Jersey:

GENTLEMEN—I have the honor to submit the following report of the Division of Medical and Sanitary Inspection for the year ending October 31st, 1911.

The duties devolving upon this department consist of the oversight of local boards of health, the inspection of all public institutions, investigation of epidemics, the control over epidemics occurring in State institutions, and the investigation of nuisances. The scope of the work outlined is such that it is impossible to cover the various subjects satisfactorily in any one year. An effort, however, has been made to deal with epidemics, and matters of immediate importance and to systematize the inspections of institutions and the supervision over local boards of health so that as much work may be accomplished within the year as time and the number of inspectors assigned to the work will permit.

LOCAL BOARDS OF HEALTH.

The direct control over infectious diseases, abatement of nuisances and general supervision over conditions directly affecting health is placed by statute with local boards of health, subject to such supervision as the law provides for, by the State Board of Health. For the enforcement of the powers thus conferred upon local boards of health proper organization is required and the adoption of ordinances are necessary. Without the legal adoption of ordinances local boards have little or no power to enforce protective health measures, and without a proper organization their

efforts are not likely to be attended with the desired results. As the proper organization of local boards of health is therefore of great importance, an effort has been made during the year to confer with as many of these boards as possible for the purpose of learning the character of the work which they were doing and wherein they failed to exercise their powers or to comply with the mandatory provisions of the health laws. We present herewith a summary of this work which, we believe, evidences the necessity for its continuance and shows that progress has been made in raising the efficiency of the work of some of the boards visited.

During the year ending October 31st, 1911, representatives of the Division of Medical and Sanitary Inspection have attended twenty-eight meetings of local boards of health and have met in 181 conferences with local board of health officials. These meetings or conferences were attended either upon special request from a local board of health for assistance or supervision in handling some local health problem, or arranged for by appointment on the part of this division following the receipt of complaint or information of inactivity on the part of local officials in enforcing health measures or failure on the part of local officials to comply with the provisions of the statutes.

Opportunity was taken at these meetings to bring to the attention of local boards the laws relative to public health administration, especially with reference to the matter of local organization, the reporting of cases of communicable diseases, and the keeping of records, the law requiring reports of certain contagious diseases occurring on dairy premises directly to the State Board of Health, and the provisions of the law regarding the employment of sanitary inspectors.

In townships much confusion was found to exist as to the duties of the assessor and the medical member of the local board of health. In a number of instances it has been presumed that the assessor was by virtue of his office, the inspector of the board, and the executive work of the board was left largely in his hands; the same statement is true in regard to the medical member of the board; indeed, the latter was frequently regarded as the board's adviser, generally receiving some remuneration for such service. The appointment of the medical member was generally found to be for a term of one year despite the fact that the law specifically fixes his term of office as three years, and further

provides that the physician appointed by the township committee becomes a member of the township board of health. Numerous erroneous ideas and practices similar to those above noted which have been handed down by retiring boards and officials to those elected to take their places, have been corrected at these meetings and conferences held with local board officials. Technical questions relating to public health administration have been dealt with by the visiting representatives or referred to the chief of this division for consideration and action. Information concerning the supervision and control over reported cases of communicable diseases has been much sought after by local boards in townships and in some of the smaller municipalities. The exact legal relation existing between the State Board and local boards of health, and just what aid and assistance the former can render the latter in the enforcement of health laws and ordinances, was not clearly understood by many of the boards visited during the past year. Almost invariably questions relating to the enforcement of the vital statistics laws were raised, and the statutes covering these subjects was either pointed out or the inquirer advised to communicate with the Bureau of Vital Statistics.

The necessity for the adoption of suitable local health ordinances has been urged and circulars and other available printed matter have been supplied to officials engaged in local health work. Concluding a meeting or conference a request has generally been made that any action taken by the local board as a result of the visit of the representative be reported to the State Board of Health. The communications received as a result of this request show that good results have usually followed these conferences. This method of supervision over local boards of health is really a continuance of the work begun the previous year, and the results are already noticeable and highly encouraging as shown by the more detailed account which follows:

The method which has been perfected and is now in operation to secure more uniform compliance with the law relating to reports of certain communicable diseases is showing results. The operation of the system of checking death certificates of persons dying from reportable diseases, against reported cases of these diseases on file in the office of the State Board, serves the purpose of drawing attention to the sanitary districts in which the law is being ignored or imperfectly complied with. It also leads to

an inquiry which results in definitely fixing the responsibility upon the proper persons in cases where non-reported cases result in death. It is hoped by the uninterrupted operation of this system to bring about a degree of compliance with the law throughout the State that will furnish morbidity records complete enough to be of some practicable value in public health work.

Investigations have been made during the past year of 156 deaths resulting from reportable diseases in which no report of the case had been received at the office of the State Board. Seventy-one of these deaths resulted from typhoid fever, 35 from diphtheria, 42 from tuberculosis, 2 from scarlet fever, 4 from anterior poliomyelitis or infantile paralysis, and 2 from rabies. In addition to these, 204 cases of communicable diseases, in which no reports were made, were investigated to learn who had been negligent in the discharge of their duties in failing to report these cases. Investigations were, therefore, made of 260 cases of notifiable diseases that were not reported to the State Board as required by law. Failure to receive these reports may be assigned to various causes, death or removal of officials responsible for receiving and transmitting reports to the State Board of Health; the death of the patient before positive diagnosis had been made; failure of local boards to designate a proper official to receive and transmit reports; verbal reporting by attending physicians to local board of health officials who fail to properly note the same on their record books; cases in which the patient was transferred to hospital for treatment and no report being made by either the attending physician or the hospital authorities, &c.

Investigations have been conducted at a number of hospitals, selected at random, to ascertain what proportions of the cases of notifiable diseases treated therein are reported to the boards of health in the districts in which the cases occurred. The information brought out by this inquiry shows that in a number of hospitals typhoid fever cases are never reported, and that the reports in other cases are filed with the local boards of health in which the hospital is located other than with the officials of the sanitary districts from which the case was sent to the hospital and in which it should be recorded. The need of some workable plan to secure correct reports in these cases is apparent.

It is interesting to note that, next to tuberculosis, typhoid fever is the one disease in which reports are most frequently neglected,

and a general lack of appreciation of the necessity of reporting cases of typhoid fever is found to prevail among the health authorities of rural districts.

Direct results of the efforts made to secure more uniform compliance with the law requiring reports of notifiable diseases are shown in the following figures:

During the year 1909, 10,562 cases of notifiable diseases were reported to the State Board of Health, exclusive of chicken pox and infantile paralysis; in the year 1910, 14,322 cases were reported, and in the year ending October 31st, 1911, 14,913 cases were reported. In 1909 reports were being received from 191 sanitary districts, and in 1911, 378 districts, showing an increase of 58.4 per cent. in the number of districts reporting in 1911 over those from which reports were received during the year 1910.

There are in the State of New Jersey 476 sanitary districts. No communicable diseases have been reported during the year in 98 of these districts. In 56 of the latter number no history was obtained of any communicable diseases having occurred, other than tuberculosis, so that during the year the State Board of Health is apparently receiving reports from 90.2 per cent. of the sanitary districts in the State. Although the reports are very incomplete, we believe enough work has been done to point out where the chief defects lie and that a continuance of our efforts, but barely begun, will result in placing the State of New Jersey among the foremost in securing somewhat reliable morbidity records. With the inauguration of the tuberculosis work, provided for by a special act of the Legislature, it is of the utmost importance that the law providing for the reports of cases of tuberculosis shall be fully complied with, and a special effort will be made to accomplish this result.

Histories of the organization and general working methods of local boards of health have been obtained from 120 sanitary districts during the past year. This work is being continued and we hope that during the coming year every local board not already organized and doing efficient work may be visited and the efficiency in administering health protective measures in each of these districts increased.

LOCAL SANITARY INSPECTION.

Chapter 251 of the laws of 1903 require that all persons performing other than clerical work for local boards of health, except those who were so engaged prior to the passage of this act, shall pass an examination and secure a license from the State Board of Health to act in the capacity of health officer or sanitary inspector. It was found that out of the 120 districts visited 68 were employing sanitary inspectors or health officers. Of this number 25 were licensed or serving legally under the act above referred to, while 43 local boards of health were employing persons not legally qualified to fill their respective positions. In 39 districts there was no inspector in the employ of the local boards, and in 7 no information was obtained on this subject. In the remaining 6 districts it was found that the sanitary inspection work was performed by the clerk or other official of the local board of health, remuneration being made upon the fee system. It is therefore evident that if improvement in the fitness of persons entrusted with the executive work of local boards of health, which should be secured by the passage of this act, is to be realized, some determined effort must be made to secure an enforcement of the law.

ORDINANCES OR SANITARY CODE.

In 58 of the sanitary districts it was found that ordinances had been adopted, as provided for by the statutes. In 50 districts no ordinances had been adopted, and in 12 others no definite information was obtained on this point. In many districts local boards were ignorant of the fact that ordinances are necessary to the proper enforcement of sanitary measures. In 6 districts, claiming to have adopted ordinances, no copies of the same could be found, in others no records of the legal adoption of their ordinances could be produced, and seldom were printed copies available for distribution.

RECORD BOOK FOR NOTIFIABLE DISEASES.

Chapter 260 of the laws of 1895 requires that all cases of notifiable diseases shall be reported to the local board of health, and further provides that records of these reports shall be kept in a book used exclusively for that purpose. Our investigations have shown that record books were kept in 53 out of the 120 districts inspected. In 11 districts reports were being recorded either in private memorandum books belonging to the officials who received them, or they were incorporated in the minutes of the board meetings or kept in some other equally unsatisfactory method.

In order to establish a uniform method of recording cases of notifiable diseases by local boards of health suitable blank forms have been prepared which are supplied upon request. Subsequent visits to the local boards applying for copies of these forms have shown that, in numerous instances, a satisfactory method of recording cases of notifiable diseases has been brought about in these districts.

While no provision is made by law, requiring local boards of health to furnish blank forms to physicians and others on which to report cases of notifiable diseases occurring within their local sanitary districts, it is customary for local boards of health to supply such forms.

ORGANIZATION.

In 78 sanitary districts included in the 120 investigated the local board had been legally organized, and in 33 some doubt exists as to the legal organization of the board. As a result of these investigations 26 organizations have been affected in sanitary districts which heretofore were without a legally constituted board of health. In 16 districts visited no minutes or other records of the proceedings of the board had been kept, and in 14 districts visited it was learned that no meetings of the local board of health had been held in over a year.

It must be borne in mind that the defects in local health administration above set forth do not apply to the larger and more progressive municipalities in the State, many of which maintain a high standard of public health administration, directed by well

equipped and able health officials. On the other hand, it refers to townships and smaller municipalities in which it is highly desirable to secure an improvement in the sanitary service. Many difficulties stand in the way of bringing this about, chiefly neglect on the part of public officials to appropriate sufficient funds to secure for their district trained sanitary inspectors, and inability to procure such individuals when funds are available. It may be that before a satisfactory standard of efficiency in health administration in rural districts can be brought about some change in the present laws will be necessary.

CONTAGIOUS DISEASES.

While local boards of health are given full power under the law to institute measures for the control and restriction of the spread of infectious diseases, occurring in the districts over which they preside, many applications are received by the State Board of Health and referred to the division from local authorities for assistance in this work, particularly from localities in which no one is in the employ of the local board who is versed in epidemiological work, and in localities in which outbreaks of unusual proportions occur. This class of work is perhaps the most useful performed by this division and most fruitful in direct results in the prevention of sickness and in saving human lives. The State Board of Health is also invested by the statutes with certain mandatory power to require action by local boards of health in case an outbreak of communicable disease exists in a municipality and the local authorities fail to institute reasonable measures to prevent the spread of infection to adjoining sanitary districts.

Assistance has been given to local boards, and investigations made through the year, in 11 outbreaks of scarlet fever, 8 outbreaks of typhoid fever, 5 outbreaks of diphtheria, 5 outbreaks of small-pox, and in one outbreak of measles. Higher appreciation on the part of the general public of the necessity of isolation, disinfection and the proper supervision over persons affected with a dangerous communicable disease, leads many local authorities to prompt action in seeking advice and assistance in instituting these measures, and there can be no doubt that the work of the investigators sent out by this department in response to requests from

local authorities has resulted in preventing many epidemics of these diseases, which threatened from incipient outbreaks, and has hastened the termination of epidemics already prevalent at the time investigations were begun.

The report of an investigation conducted in an epidemic of small-pox, which occurred in Penns Grove, Salem county, and an outbreak of typhoid fever occurring in Lambertville, Hunterdon county, together with the report of the investigation of an outbreak of diphtheria investigated in Salem county during the past year, are given because of interesting facts brought out in these inquiries.

TABLE SHOWING SANITARY DISTRICTS IN WHICH OUTBREAKS OR CASES OF COMMUNICABLE DISEASES WERE INVESTIGATED DURING THE YEAR ENDING OCTOBER 31, 1911.

SANITARY DISTRICT.	COUNTY.	NAME OF DISEASE AND NO. OF CASES.				Date of Outbreak.
		Scarlet fever.	Typhoid fever.	Diphtheria.	Small-pox.	
Buena Vista Township.....	Atlantic.....	6				Jan. 6, '11
Buena Vista Township.....	Atlantic.....	1				Jan. 23, '11
Franklin Township.....	Bergen.....			1		Dec. 10, '10
Hasbrouck Heights Borough.....	Bergen.....				56	
Beverly Township.....	Burlington.....		6	1		Sept. 15, '10
Southampton Township.....	Burlington.....		1			Aug. 22, '10
Commercial Township.....	Cumberland.....				2	
Maurice River Township.....	Cumberland.....					
South Orange Village.....	Essex.....		3			Nov. 4, '10
Clayton Borough.....	Gloucester.....		21			
Deptford Township.....	Gloucester.....			2		
Clinton Borough.....	Hunterdon.....	1				
Lambertville.....	Hunterdon.....	41				
Lebanon Township.....	Hunterdon.....			8		Jan. 1, '11
Hopewell Borough.....	Mercer.....	2		1		April 9, '11
Hopewell Borough.....	Mercer.....					Jan. 23, '11
Lawrence Township.....	Mercer.....	7				Feb. 21, '11
Lawrence Township.....	Mercer.....	7				July 17, '11
Dunellen Borough.....	Middlesex.....	1	4			April 18, '11
New Brunswick City.....	Middlesex.....	13				Jan. 9, '11
Belmar Borough.....	Monmouth.....	1				
Farmingdale Borough.....	Monmouth.....	1				
Wall Township.....	Monmouth.....	1	2			Nov. 14, '10
Rockaway Township.....	Morris.....	1				Jan. 18, '11
Lower Penns Neck Township.....	Salem.....			1		Dec. 30, '10
Penns Grove Borough.....	Salem.....			28		Aug. 22, '10
Salem City.....	Salem.....			22		Jan. 5, '11
Upper Penns Neck Township.....	Salem.....			4		Mar. 20, '11
Bond Brook Borough.....	Somerset.....		8			Feb. 1, '11
Sussex Borough.....	Sussex.....	6				
		46	26	34	36	56

REPORT ON AN OUTBREAK OF SMALL-POX IN PENNS GROVE, SALEM COUNTY.

In accordance with instructions Penns Grove, Salem county, was visited by a representative of the Division of Medical and Sanitary Inspection on January 9th, 1911, in response to a request from the local authorities for assistance in an outbreak of small-pox. Up to the time of this visit ten cases of the disease had been reported to the local board of health. The first of these cases were reported on January 7th, after an illness covering eight days before the true nature of the disease was determined. Many persons had, therefore, been exposed to the infection. A meeting of the local board of health was held upon the arrival of the State representative, and the work which had been done by the board was reviewed. A hospital building was then under construction and many vaccinations had been performed by local physicians. The public schools and churches had been closed upon recommendations of the local authorities and orders had been issued by the local board requiring a number of business houses, in which infection was thought to have taken place, to be closed. At the meeting above referred to plans were perfected for instituting additional preventative measures and an effort was made to systematize the work in a manner to secure prompt and efficient results. In order that the action contemplated might be carried out in a legal manner a copy of the local health ordinances was asked for, but it appeared that none had been adopted providing for quarantine and disinfection, nor for the removal of persons suffering from infectious diseases to a hospital. The board was therefore without power to legally enforce all its orders. Notwithstanding this fact the gravity of the situation was apparent and it was decided to take the necessary action to effectually handle the situation. Relying on the powers granted to local boards of health in the general act of 1897, together with the provisions of an old ordinance of more than doubtful validity, the following rules and regulations were adopted:

WHEREAS, The Board of Health of the Borough of Penns Grove has information that eleven cases of small-pox now exist in private dwellings within the borough limits, all located in the built-up section of the borough, and

WHEREAS, In the judgment of this board safe and proper isolation cannot be maintained for the persons so affected, in the dwellings in which they now reside, be it

Resolved, That under authority conferred under the provisions of sections 12 and 24 of chapter 68 of the laws of 1887, the following rules and regulations are hereby adopted:

Rule 1. All persons who have been reported to this board as suffering from small-pox, or who may hereafter be reported to be affected by said disease, shall be removed to the hospital building now being constructed for the detention and care of small-pox cases.

Rule 2. All dwellings or other buildings, together with their contents, from which persons affected by small-pox may be removed, or in which persons thus affected are known to have inhabited, shall be disinfected under the direction of the Board of Health or its authorized agent.

Rule 3. All persons known to have been directly exposed to the infection of small-pox, and who have not directly thereafter been vaccinated, shall be quarantined for a period of fourteen days dating from the day of the last known exposure.

Rule 4. All persons known to have had an exposure to small-pox, and who have directly thereafter been vaccinated, shall be required to report daily to the medical officer of the Board of Health for examination, for a period of not less than 14 days, following the date of their last known exposure to the infection.

General vaccination was advised and strongly urged, and many persons not voluntarily seeking the protection thus afforded, and known by the authorities to have had a direct exposure to the disease, were sought out by the Board of Health physicians and offered vaccination. In cases where this service was refused the suspects were placed under quarantine as provided for in No. 3 of the above rules.

Five of the first group of cases occurring in the borough of Penns Grove were among the workers at the Du Pont Powder Works, at which about five hundred persons were employed. Directly upon learning of the nature of the disease affecting their workmen an order was issued by the company requiring that all employes should be vaccinated. This work was performed at the expense of the company, and all who refused to accept vaccination were excluded from the plant. The promptness of this action undoubtedly prevented what otherwise would have resulted in a widespread epidemic among the many susceptible employes who had been exposed to cases known to have entered the shop during the early eruptive stage of the disease.

The hospital buildings were completed and the removal of nine cases affected on January 12th, four days following a diagnosis in the first cases, or eleven days subsequent to the onset of the

disease in these persons. Owing to many exposures which were known to have taken place during the latter named period of time, and the delay in vaccinating the persons thus exposed, the occurrence of other cases which followed were fully anticipated.

While up to the time of the first visit of the representative of this division no careful study had been made to determine the source of infection causing the outbreak. A generally accepted theory prevailed that the infection was due to contact with a man who came to Penns Grove from Wilmington, Del., on December 23d, following his release from a small-pox detention hospital in which he had suffered an attack of the disease, and where he remained from December 8th to 23d. He had small-pox eruption on his body eight days before entering the hospital, which fixes the date of his attack about November 28th. While an investigation of the case showed this theory to have been erroneous, this case had, further back in its history, played a vital part in the line of transmitting the infection. The onset in the first group of cases in Penns Grove occurred on December 30th and 31st, followed by a marked eruption in some cases on January 2d. It was established in some of the cases investigated that the sufferers had not seen the convalescent from Wilmington nor had there been any known indirect exposure to him following his release from the hospital and return to Penns Grove. In any event the necessary incubation period had not elapsed for infection to have occurred from such exposure. What proved to have been the source of infection causing the outbreak in Penns Grove was discovered through an epidemiological study of the first ten cases in the borough, together with two others which occurred a few days subsequently in persons residing near Hawkes Bridge, in Upper Penns Neck township. Some of the persons first infected gave a history of having noticed a suspicious eruption on the face and hands of a person named Grover Reign, with whom they had worked, or otherwise associated with, in Penns Grove, between December 18th and January 3d. A careful investigation of these reports showed the following history, which was subsequently verified in all important points. Reign, 27 years old, is said to have been vaccinated at the age of four or five years. He was taken ill with headache, backache and fever, followed by an eruption which appeared about December 19th. This man left the house in which he then resided with his wife and family, and went

to the home of his mother, who is said to have suffered an attack of small-pox in early life, where he remained in the house for a few days on account of illness. It is claimed that medicine was procured from a local physician, at the onset of his illness, without the physician having seen the patient. It is also stated that he subsequently called upon a local physician for treatment. The physician last referred to had no record of such a visit, nor did he remember the occurrence of the alleged call. A prescription, which had been filled for the patient in question, signed by the physician referred to, and dated December 19th, was found on the files of a local druggist. The drug prescribed for is one commonly used as a lotion to allay itching. Another practicing physician states that Reign requested treatment from him for a skin eruption while on the public street. Treatment was refused on this occasion, and the patient advised to call later at the physician's office. This the patient did not do. Many persons who saw Reign on the streets and in public places during the period of time from December 18th to January 3d, with some skin eruption described as numerous "boils" on the face, wrists and hands, including the palms, which apparently contained yellow matter and showed dark colored heads. Reign was employed, with a number of other men, at work in filling an ice house in Penns Grove on December 21st, 22d and 23d. Two of his working companions on the above named dates, colored persons, who had residence in Upper Penns Neck township, near Hawkes Bridge, were taken ill on January 5th and broke out with typical small-pox eruption on January 8th. Neither had been vaccinated. Reign left Penns Grove on January 23d, by train, for Philadelphia, from thence he continued his journey to Baltimore, and took a steamer on the Merchants and Miners Steamship Line, on January 4th, bound for Savannah. He then proceeded by train to Darien, Ga., due to arrive on January 9th, where he entered the employ of Mr. A. Dolbow, as a shad fisherman. The statement that Reign spent a night in Wilmington, Del., some time preceding his illness, was later verified, and it was also learned that he slept that night with the patient above referred to as having been treated for small-pox in the municipal hospital at Wilmington. The exact date of this occurrence could not be fixed, but it was not more than a day or two preceding the admittance of the case to the Wilmington hospital on December 8th. While the person released from the

hospital in Wilmington did not himself bring the infection to Penns Grove, he doubtless was the source of contagion which resulted in Reign's illness and through him caused the outbreak. It is shown by the epidemiological study made of this outbreak that Reign was responsible for the direct infection of 17 of the 27 cases of small-pox which followed in persons who were exposed to his unrecognized case of illness. In tracing back the line of infection for the cases which had been treated in the hospital in Wilmington, Del., some interesting facts were brought out which show that, in all probability, the outbreak in Wilmington was due to infection brought there by members of the crew of the oyster boat Alice Barnes, coming from the city of Millville, N. J., where a widespread epidemic of small-pox had prevailed during the summer and fall of 1910, that epidemic being characterized by the same mild type of infection as that which appeared in the cases occurring in Wilmington, and later in Penns Grove. In the Millville epidemic some practitioners insisted that the infection was due to chicken-pox and treated the cases as such, notwithstanding the fact that the infected persons gave a clear history of having previously suffered from chicken-pox, and that they had not been vaccinated. No diagnostician was called to assist in determining the true nature of the disease causing so many cases of illness in Millville, and, in some instances, it appeared that a diagnosis was made solely on the severity of the attack, regardless of the previous history of the patient as to his vaccinal status, previous attack of chicken-pox, recent exposures, &c. Cases in the Millville epidemic were occasionally reported as chicken-pox and later, on developing a more severe type of illness, the reports were changed to small-pox. This led to confusion, followed by hesitating and less stringent preventative measures on the part of the local board of health, and in many instances cases were not reported at all. It was from cases which occurred in a family residing at 320 Morris street, Millville, during the epidemic above referred to in said city, that infection was contracted which passed from person to person and eventually caused the outbreaks in Wilmington, Del., from which locality it spread to Penns Grove, N. J., and to two townships adjacent thereto. The cases occurring in Penns Grove and surroundings were mild in type and, occurring singly, a diagnosis would probably have been extremely difficult in some cases. In the case of two affected children no

physician was called, and the nature of their illness would probably not have been discovered had not their mother contracted infection from them and suffered a more marked type of the disease which required medical treatment. Some of the cases were quite typical, however, and one severe case of confluent small-pox was numbered among them. There were no fatalities. Dr. W. M. Welch, of the Municipal Hospital, of Philadelphia, who was called by the Penns Grove local board of health to establish a diagnosis in some of the earlier cases of milder type, said in the report of his examination: "I have no hesitancy in pronouncing the prevailing disease small-pox. It is certainly of an extremely mild type, so mild indeed as to be quite atypical in many cases." As a result of this mild type of the infection many residents of the borough refused to accept the diagnosis of small-pox, thereby making preventative measures more difficult to enforce. Of the twenty-eight cases occurring in the borough of Penns Grove, twenty were removed to the isolation hospital. Five cases were quarantined in private houses and three cases, including the original one, were not discovered until after recovery and no restrictive measures were therefore placed about them.

The longest period of time for quarantine in any one case, dating from the onset of the disease, was 29 days, and the shortest period 10 days. The average length of quarantine was 25.1 days.

The hospital record shows the average detention for the twenty cases treated there to have been 14.75 days. The longest detention in the hospital for any one case was 23 days, and the shortest, 9 days.

The vaccinal history of those who suffered from the disease shows that twenty-five had never been vaccinated; in one an attempt at vaccination in early life had proved unsuccessful and two claimed to have had successful vaccinations, one in about 1898 and the other one about 1881. In the five cases which occurred in the adjoining townships, only one of the sufferers had been previously vaccinated. This was a colored woman, about 70 years of age, said to have been vaccinated when a child. Many vaccinations were performed in Penns Grove and vicinity. Out of a population of about 2,100 in the borough five local physicians claim to have jointly vaccinated about 1,755 persons before the epidemic had terminated. The Board of Education, however, re-

fused to require that school children, as a prerequisite to attendance in the public schools, be vaccinated.

Many persons deferred vaccination on the plea that they considered the results in a successful vaccination as bad as the illness suffered by those attacked by the disease, while others, holding pronounced objections to vaccination, put forth the usual arguments advanced by persons unfamiliar with the protective value of vaccination against small-pox and the much overdrawn and erroneous statements in circulation concerning the baneful results alleged to follow the operation.

The temporary hospital buildings constructed for the successful handling of this outbreak were well built and equipped to serve the purpose for which they were so hastily designed and completed. The main building is 16 x 60 feet on the ground surface and one story high. A movable partition divides the room into two wards, for the separation of the sexes, and contains a physician's room and a bath room. The buildings were heated by stoves, lighted by gas and supplied with running water piped from the street main. The administration building, 16 x 32 feet, contains the kitchen, store room and sleeping quarters for nurses and other employes.

The cost to the borough in dealing with the outbreak, according to figures furnished by the local authorities, was \$4,150.97. Of this amount \$1,262.31 represents the cost of construction and equipment of the hospital buildings, which still stand as an asset to the borough. The sum of \$2,888.66 is chargeable to treatment of 27 actual sufferers from the disease (twenty of this number being cared for in the hospital), and to measures adopted against the spread of infection. It is therefore shown that the cost to the borough of each case treated was \$106.61.

The damage suffered by the commercial interests of the borough as a result of this epidemic is difficult to estimate. It was, however, considerable, for the town was shunned for a period of five or six weeks by the inhabitants of smaller nearby towns and the surrounding farming district, who customarily make Penns Grove a shopping center. The general traveling public also avoided the town and wholesale business houses instructed their salesmen to discontinue their regular visits to Penns Grove, because of numerous complaints from patrons in other localities who objected to receiving calls from agents known to have previously been in the infected zone.

TYPHOID FEVER IN LAMBERTVILLE.

In accordance with instructions the city of Lambertville was visited on August 14th to assist the local authorities in the investigation of a number of cases of illness which closely resembled typhoid fever in clinical symptoms, but in which no definite diagnosis had been established. The rather alarming number of cases then existing in the city showed the infection to be widespread, though its origin and method of transmission was not at that time suspected.

Lambertville is a city of about 4,600 inhabitants, built upon a narrow strip of land which lies at the foot of the hills that rise on the east, and washed by the waters of the Delaware River which marks its western boundary line. The town of New Hope lies directly across the river from Lambertville and contains about 1,500 inhabitants. The two settlements are connected by a trolley and wagon bridge which spans the river at this point.

At the time this inquiry was started there were but two or three of the many cases under treatment in which a positive clinical diagnosis had been determined upon. Physicians in attendance upon the cases reported that during the onset they presented the usual symptoms accompanying the early stages of typhoid fever, but as the cases progressed beyond the first or second week the symptoms became such as to create a doubt about the diagnosis. The local health officials were, therefore, uncertain as to the true nature of the infection with which they had to deal as well as its source.

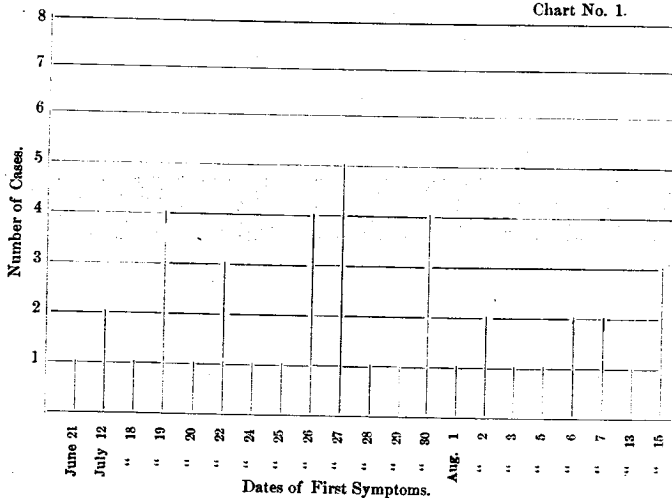
A summary of the epidemiological study of the outbreak, and the results of the laboratory work done in connection therewith, are here given. The bacteriological work was done in the State Laboratory of Hygiene. The data from which the other facts have been compiled was gathered by personal investigations made in each case, supplemented by facts furnished to your inspectors by physicians in attendance upon the cases. Considerable care has been exercised in gathering this information, and all statements made by our informers apparently having an important bearing on the results of the findings, and in which there seemed a reasonable doubt of the accuracy, were subsequently verified.

OCCURRENCE OF CASES.

During the latter part of June there was a case of typhoid fever reported to the local board of health from the northern part of the city. The onset of the case dated back to June 21st. It ran a mild course and no laboratory diagnosis was made. During the second week in July two other cases occurred in other sections of the town, and they were followed by eight others before the close of the third week in the same month. New cases continued to occur at the rate of from one to five each day, with but little intermission, until August 15th, when the outbreak suddenly terminated with the report of three cases, thus bringing the total number of cases up to 41. Chart No. 1 shows the number of cases and the dates on which the first symptoms were noted in each.

CHRONOLOGY OF CASES.

Chart No. 1.



The absence of a sharp rise in the number of cases occurring at any one time, and the almost daily occurrence of cases between July 18th and August 15th shows a slight but continuous infection lasting over a period of about eight weeks.

In considering the various probable sources of infection to which the outbreak might be due, inquiry was made along the following lines:

WATER.

The public water supply for the city of Lambertville consists of a filtered surface supply, stored in two reservoirs, from which water is delivered under pressure throughout the town.

Among the forty-one cases of sickness investigated, thirty-three used water exclusively from the public supply; six used water from the public supply and cistern water; one used the public supply, cistern and spring water; one used the public supply and spring water; four used cistern water only; one used well water and melted ice, and three used only melted ice for drinking purposes. Thirty-three cases (80.5 per cent. of the entire number) drank water drawn wholly or in part from the public supply, while eight cases, according to the most reliable information procurable, drank none of this water. These figures alone would be sufficient to allay suspicion against the water supply, providing no consideration was given to the great liability of error in procuring absolutely correct information on this point in a community where a public supply is in general use. This factor of error is more liable to occur where inquiry concerning the cases is conducted long after the probable date of infection, as was the case in this epidemic. This fact was constantly borne in mind while procuring this data. Before and at the time this investigation was started suspicion had been cast upon the water supply, but no tangible facts were presented by the holders of this theory of water-borne infection to substantiate their contention.

Samples of water from the public supply and also from a spring, from which water was piped to several houses in which cases occurred, were examined chemically and bacteriologically with entirely satisfactory results. More work might have been done on the water supply had it been of doubtful quality, and had not other lines of inquiry appeared more likely to offer an explanation of the problem sought.

FRESH VEGETABLES AND FRUITS.

Vegetables and fruits that are eaten without cooking were carefully investigated but no considerable number of cases had procured a supply from the same source. Other foods through which the infection causing intestinal disturbances are known to have been transmitted, such as shell-fish, the product of bake shops, ice cream, soft drinks, &c, were considered with negative results. The outbreak lacked that explosive character invariably following in cases where considerable numbers of persons partake of infected food served at public gatherings.

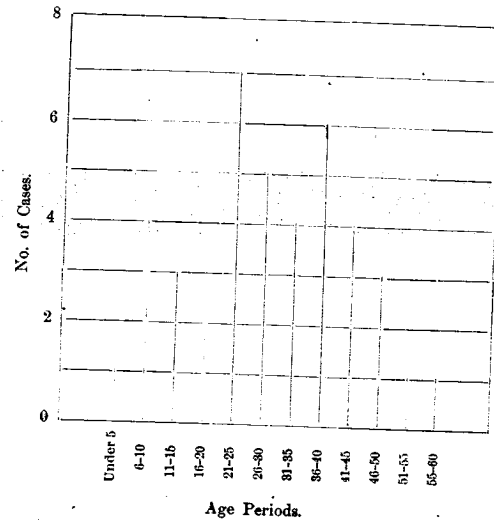
CONTACT.

Single cases occurred in twenty-six houses, two cases each in six houses, and three cases in one other. In the dwelling in which there were triple cases, the second followed the first in fifteen days and the third developed thirteen days later. In the six houses in which two cases occurred in each, there were two in which both patients were taken ill at the same time; in three others there were lapses of seven, eight and ten days respectively between the occurrence of cases, and in one other twenty-two days intervened between the cases. Considering the dates of onset only, and allowing seven days to be a sufficient length of time for the incubation period in the infection causing this outbreak there could not have been more than six cases due to contact from preceding cases occurring in the same houses, and there was no evidence to show that any case resulted from contact with infected persons other than on the premises upon which the secondary case occurred. There was nothing in common in the social conditions of the sufferers, nor were they grouped in any one section of the city. The sexes were about equally represented, and the ages of the infected persons showed no unusual feature.

OCCURRENCE OF CASES BY SEX AND AGE PERIODS.

TABLE I.

Age.	Sex.		Number of Cases.
	Male.	Female.	
Under 5	1	..	1
6-10	4	..	4
11-15	..	3	3
16-20	..	2	2
21-25	2	5	7
26-30	2	3	5
31-35	4	..	4
36-40	1	5	6
41-45	3	1	4
46-50	2	1	3
51-55	1	..	1
56-60	..	1	1
	20	21	41



FLY INFECTION.

There are no sewers in the city of Lambertville. Cesspools and privy vaults abound throughout the town. On many premises the house drain discharges into a large leaching vault over which stands a privy building. In other cases the vault and cesspools are separate structures, but in no instance was a privy found to be so constructed that flies and other insects were excluded from its filthy contents. On 29 of the 34 premises upon which cases occurred human excrement was stored in a manner that afforded ideal breeding and feeding places for flies, and in many of the vaults and cesspools large numbers of mosquitoes were found to be breeding in their semi-liquid contents. The discharges from the patients had not been disinfected in many of the cases, while in some others this all important preventative measure had been performed in an inefficient manner. With but few exceptions the infected excretions were placed in the cesspools or privy vault. It therefore appears that conditions existed which might be regarded particularly favorable to fly infection, yet from a study of the data gathered in this investigation it does not appear that infections in this outbreak was due to such a cause. The early date in the summer at which the epidemic began, together with its abrupt termination at a time when flies were becoming most numerous and active, do not argue fly infection, particularly so when it is considered that no measures had been taken to disinfect the various cesspools and vaults in time to have brought this about.

MILK SUPPLY.

There are nine persons or firms who daily distribute milk in the city of Lambertville. In addition to these there are a number of persons who keep one or more cows and sell to neighboring families what surplus milk they produce above that required in their own household. The average daily amount of milk furnished to consumers by nine dealers referred to is shown in the following table, each dealer being referred to by a letter of the alphabet.

TABLE SHOWING DEALERS AND AMOUNT OF MILK DISTRIBUTED DAILY BY EACH TO CONSUMERS IN LAMBERTVILLE.

Dealers.	TABLE II.	Daily amount distributed.
a	180 qts.
b	150 qts.
c	150 qts.
d	125 qts.
e	120 qts.
f	80 qts.
g	60 qts.
h	120 qts.
i	200 qts.
j. Various other sources, estimated.....		1,185 qts. 300 qts.
Total		1,485 qts.

TABLE SHOWING SOURCE OF MILK SUPPLY FOR DWELLINGS IN WHICH CASES OCCURRED.

Dealer.	No. of Houses.	No. of Cases.		
A.	19	26	19	26
From dealer A exclusively				
A.B.	2	2		
A.E.J.	1	1		
A.I.	1	1		
A.C.D.	1	1		
A.J.	1	1		
A.C.G.	1	1		
A.C.J.	1	1		
A.D.J.	1	1		
In part from dealer A.....				
B.	1	1	9	9
C.	1	1		
D.	1	1		
H.	1	1		
?	2	2		
From various other dealers				
			6	6
Total			34	41

Cases occurred among the occupants of 34 houses. Twenty-six cases developed in 19 houses drawing their entire supply of milk from dealer A; nine families in which single cases occurred had procured a portion of their milk supply from dealer A, or

the infected persons are known to have ingested some of this milk while away from their homes, and within the incubation period of typhoid fever preceding the dates of attack. There were four cases occurring in as many houses, in which the patients were quite sure that they had not consumed milk known to have been supplied by dealer A, and one case in each of two houses in which no reliable history was to be had concerning the source of milk supply.

All six houses in which secondary cases occurred were among those supplied with milk exclusively by dealer A.

From the figures above given on the milk supply it appears that dealer A furnished about 12 per cent. of the 1,400 or more quarts of milk daily supplied to about 4,000 consumers, yet 85.3 per cent. of the 41 cases occurred among persons who are known to have used milk supplied by him. In addition to this, eighteen of the infected persons were habitual milk drinkers before their illness; sixteen frequently drank milk; five others claim to have used raw milk on cereals only; one never used milk, and one takes milk only in coffee.

The above facts leave little doubt but that the infection which caused the illness from which persons suffered in this epidemic was in some way associated with the milk supply of dealer A, and that it was due either to infection in the milk itself or was transmitted through the utensils used in its distribution, or by the person who distributed the milk. A fact which it has been much easier to point out than it is to show just how this condition was brought about.

The dealer who distributed the suspected supply conducts a dairy about three miles distant from Lambertville. For a considerable length of time preceding the outbreak all milk distributed by this dealer was produced upon his own dairy, except that on Saturdays he purchased from a nearby dairyman. There was no history of recent illness among the eleven members of the dealer's family. Blood specimens were taken from each member of the family and from his one employe. These specimens gave negative results when subjected to agglutination tests for typhoid and para-typhoid. No dipped milk was sold. The bottles were washed with a power driven bottle washer in a milk house above the average in cleanliness, and filled for distribution by the dairyman, or some one of the five members of his family who assisted

in the work. There was no provision for sterilizing bottles and utensils on the dairy. The water used in cleansing bottles and utensils, as well as for all purposes in the dwelling, was drawn from a shallow dug well located within twenty feet of a leaching privy vault. The wooden cover over this well was leaky and the surrounding ground unclean. An analysis of the water showed gross pollution. No history of illness is known to have occurred among any of the considerable number of persons who are known to have used water from this well. The twenty-two cows in the herd were examined physically by E. R. Voorhees, veterinarian. As a result of this examination one cow which gave evidence of tuberculosis of the lungs and pharyngeal glands, and one with a diseased udder, resulting from a previous attack of maminitis, but then dry, were excluded from the herd. The dairy from which dealer A procured a portion of his Saturday's milk supply was also carefully examined, including an examination of the herd, but no conditions were found to which the outbreak could be attributed, and no sickness was known to have occurred among the persons who regularly consumed the milk produced thereon.

Notwithstanding the negative history resulting from inquiries conducted on the dairies the relative large number of cases that appeared among the persons consuming milk supplied by dealer A called for definite action. Accordingly, on the third day following the beginning of this inquiry, it was required that all cans, bottles, utensils and equipment used by this dealer should be daily sterilized. The removal of empty milk bottles from infected houses, which had continued up to this period, was also stopped. The sale and collection of repeatedly used cardboard milk tickets ceased and the use of water from the polluted well on the dairy was discontinued on August 18th. On August 21st the pasteurization of the milk at the dairy was begun. In considering the possibility of infection having been transmitted from house to house in bottles used by the dairyman whose milk supply fell under suspicion, we have the following significant facts:

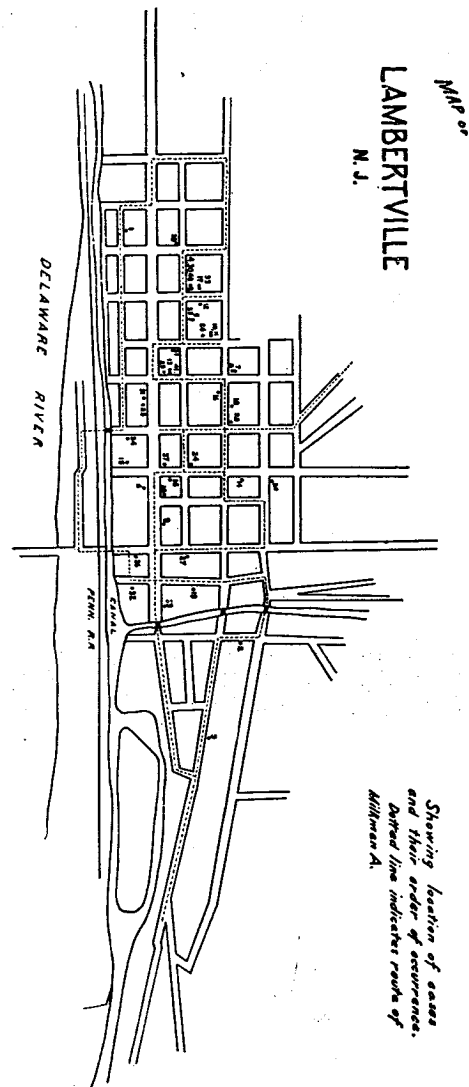
Preceding and at the time of the occurrence of the original case, on June 21st, the family procured milk from dealer D, who served them milk dipped from the can. On or about June 30th dealer A was called in by this family to supply bottled milk for the exclusive use of the patient. Two quart bottles each day were required for this purpose, and the empty bottles were removed by

the dealer at the time the daily delivery of milk was made. These bottles received no special treatment and were washed at the dairy with others in a manner already described. We have no knowledge how the bottles were handled in the infected house. A nurse was employed to care for the typhoid patient. The same nurse also looked after another sick person in the house, did the cooking and performed other household duties.

About two weeks following the first removal of bottles from this infected house by dealer A, one person in each of two other families supplied with milk by him were taken ill. New cases continued to appear among this dealer's customers, on dates which are shown in the following table, until the termination of the outbreak on August 15th. The dealer also continued to remove empty bottles from the house in which other cases occurred, until after this investigation was begun.

TABLE SHOWING NUMBER OF CASES, LOCATION, DATES OF ONSET AND MILK DEALER.

Case No.	Street and No.	Dates of Attack.	Milk Dealers.
1	102 Clinton	June 21	D
2	75 Swann	July 12	A E A J
3	129 S. Main	July 12	A
4, 30, 40	46 Delaware	July 18, Aug. 2, Aug. 15	A
5, 22	118 George	July 19, July 27	A
6	39 N. Union	July 19	A
7, 8	104 N. Main	July 19, July 19	A
9	N. Union	July 20	A
10, 11	Jefferson	July 22, July 22	A
12	47 Delaware	July 22	A
13, 41	30 Delaware	July 22, Aug. 15	A
14	85 Coryell	July 25	C
15	16 Coryell	July 26	A
16	19 N. Union	July 26	A
17, 33	50 Delaware	July 26, Aug. 5	A
18	86 N. Main	July 26	A
19	55 Ferry	July 27	A I
20	46 N. Franklin	July 27	....
21	17 Jefferson	July 27	A C D
23	28 Delaware	July 27	A J
24	44 Coryell	July 28	A
25	85 N. Union	July 29	A
26	32 Jefferson	July 30	A B
27	45 Bridge	July 30	A
28	68 York	July 30	A C G
29	N. Union	Aug. 1	B
31	86 N. Union	Aug. 2	A
32	11 Ferry	Aug. 3	....
34	9 York	Aug. 6	A
35	35 Coryell	Aug. 6	A C J
36	35 Bridge	Aug. 7	A B
37	32 Coryell	Aug. 7	A
38	34 Perry	Aug. 13	A D J
39	26 S. Union	Aug. 15	H



DIAGNOSIS—LABORATORY WORK.

The results of the laboratory findings in the examinations of blood specimens and feces proved of little assistance in clearing up the diagnosis. One or more specimens of blood from each of 29 cases were examined by the agglutination test for typhoid fever. A positive Widal reaction was secured in five of these cases, and four others were reported as atypical. Fourteen of these cases were tested for para-typhoid with unvarying negative results. Examination of stools and urine was made in three cases which were likewise negative.

Dr. Closson, president of the local board of health, attended twelve or more cases during the outbreak, and from a study of these cases, and others seen by him in consultation with other physicians, has described the clinical symptoms as follows:

The prodrome was short. For three or four days before taking to bed there was a feeling of lassitude and no desire to work. Once in bed the more prominent symptoms soon developed, pains in the muscles of the back and back of neck, severe headache, especially on top of the head, profuse sweats, sometimes two in twenty-four hours. Loss of appetite in some but in others there was a desire for food all through the course of the disease. The tongue was dry and covered with yellowish gray coat and an offensive odor to the breath. The pulse was mostly rapid, from 95 to 120, quite full volume but low tension. Constipation in all but three or four cases. The kidneys acted normally, and urine examination revealed nothing. The temperature varied from 99° in the morning to 104° in the evening. In the second week of the disease these symptoms were very little aggravated, but the patient was more exhausted.

The beginning of the third week the fever dropped, all other symptoms disappeared, and by the end of this week convalescence was well established with no complications. Three patients suffered relapse, but the symptoms were mild and run a short course. There were no deaths.

RESULTS OF LABORATORY EXAMINATIONS.

Case No.	Typhoid.	Para-Typhoid.	Stools.	Malaria.
1				
2	- x			
3	-			
4				
5*				
6	x			
7	- - - -			
8		-		
9	- a -	-		
10	- - -			
11	a			
12	x x			
13	-			
14	- -	-		
15				
16	-	-		
17	a	-		
18	-			
19				
20	a a -	- -		
21				
22	-			
23				
24	a			
25	- a	- -		
26	x			
27	- - a x -			
28				
29				
30				
31				
32	- -	-		
33				
34	- -	-		
35	- -	-		
36				
37	-	-		
38	-	-		
39	- -	-		
40				
41	- -	-		

Thanks are due to Drs. Closson, Romine and Williams for their hearty co-operation in the investigation in cheerfully furnishing information and procuring samples for bacteriological examinations.

CONCLUSIONS.

Notwithstanding the fact that a laboratory diagnosis was made in only five cases there can scarcely be a doubt but that the forty-one cases of sickness investigated in this epidemic were caused by the same infection.

Second. From a history given of the clinical symptoms of the cases the outbreak was probably due to typhoid or para-typhoid infection.

Third. While no history of infection was found on the premises of milk dealer A, nor among the persons who assisted in the collection and distribution of the milk supplied to consumers by him, the evidence gathered in the investigation shows that the infection was without doubt transmitted through the milk supplied by dealer A.

Fourth. No information was obtained showing that milk bottles were unduly exposed to infection in the dwellings in which the first and subsequent cases occurred, but the facts which were gathered suggest that infection may have been spread through bottles removed from infected houses.

Fifth. The abrupt termination of the outbreak on the day following the beginning of the investigation, shows that the infection had become inactive before the preventative measures instituted as a result of the investigation had become operative.

INVESTIGATION OF DIPHTHERIA OUTBREAK IN SALEM,
SALEM COUNTY.

In accordance with instructions and in compliance with a request of the local board of health of the city of Salem, an inspection has been made of the A. M. Action Public School Building in said city, and an outbreak of diphtheria, thought by some to have had its origin in said building, was investigated.

The heating and ventilation of the school buildings above referred to was inspected and reported upon under date of October 27th, 1909. There has been no improvement in the defects set forth in the report of said inspection.

Twenty-two clinical cases of diphtheria have been reported to the local board between the dates of August 22d and December 9th, 1910. There have been three deaths. Nine of the above number of cases have occurred in children who attended the A. M. A. School; one attending the Samuel Copner School Building; one, the Griffith Building; two were in the kindergarten building, and nine cases were among persons who were not of school age. Three of the nine cases occurring outside of school children are secondary cases to those occurring in the A. M. A. Building, and one is a secondary case to one of those occurring among the kindergarten pupils. In the A. M. A. Building there have been cases among pupils in rooms 1, 3, 4 and 5.

A somewhat careful study of the facts gathered by the local health inspector and from information procured at the A. M. A. School Building, shows that the first case in the outbreak developed several weeks preceding the date of the opening of the fall term of school, and that the person in whom this case occurred did not subsequently attend the A. M. A. School. It was stated that prior to the present outbreak there had been no known case of diphtheria among pupils attending the A. M. A. School Building since December, 1909, and the board of health records show no cases reported in the city since May, 1910.

Case No. 2, reported November 15th, occurred in a family from which no one attended school. Case No. 3 was reported on November 14th, and the patient died on the following day. The child was not of school age, but another child in the same family was a pupil in the A. M. A. School and was present up to and including the day preceding this death. Other children left the school building on November 14th, 15th, 16th, 18th and 21st on account of illness, which subsequently proved to be diphtheria.

It appears quite probable that the pupil who had attended the A. M. A. School from the dwelling in which the death above referred to occurred may have been a "carrier case" and have spread the infection which subsequently caused the cases in the same school. The inquiry shows that the infection is not entirely confined among persons residing in families from which children attended the A. M. A. School Building, but that it extends to persons in attendance at other school buildings and also to those having no direct nor indirect connection with the schools.

The schools were closed between the periods of November 21st and 28th. They were then opened for sessions on the 28th and 29th, since which time they have remained closed.

Specimens for bacteriological examination have only been taken from scholars whose throats appeared suspicious when examined by the medical school inspector, and isolation restrictions have sometimes been withdrawn by the local board of health upon one negative reply from clinical cases, and no specimens have been required from other members of the family in which these cases have occurred.

It was suggested to the supervising principal, who was present at the time of the inspection of the school building, and also to the president and secretary of the local board of health, that the schools be re-opened and that a systematic effort be made to weed out carrier cases from among the scholars in the schools in which clinical cases have appeared.

A study of the records of reported contagious diseases in the possession of the local board of health shows that diphtheria has been prevalent in this city, for at least two years past, to an extent that infection has doubtless become widespread, and outbreaks of the disease, such as at present prevail, may reasonably be expected to occur at more or less regular intervals unless determined preventative measures are enforced.

The records show that 81 clinical cases of diphtheria were reported during the period from April 8th, 1909, to December 19th, 1910, as follows:

April, 1909	3 cases.
June, 1909	2 "
July, 1909	5 "
August, 1909	6 "
September, 1909	10 "
October, 1909	18 "
December, 1909	5 "
January, 1910	8 "
March, 1910	2 "
May, 1910	1 case.
August, 1910	1 "
October, 1910	1 "
November, 1910	13 cases.
December, 1910	6 "

The following verbal suggestions for controlling the epidemic were made:

First. That the schools be re-opened and that a specimen be taken from each pupil attending a school building in which a clinical case of diphtheria has occurred.

Second. Exclude from school all carrier, as well as clinical cases, and also all scholars who reside in families in which either of this class of cases are known to exist.

Third. Require at least two consecutive negative specimens before withdrawing isolation restrictions from infected dwellings or persons, and also a negative reply from specimens taken from all school children coming from families or dwellings in which clinical or carrier cases have been found.

Suggestions for cleansing the school building were made to the supervising principal.

EPIDEMICS OCCURRING IN STATE INSTITUTIONS.

The following law, passed in 1908, outlines the powers of the State Board of Health in dealing with epidemics of contagious diseases which occur in the various State institutions:

CHAPTER 292, LAWS OF 1908.

AN ACT requiring the Board of Health of the State of New Jersey to initiate and prosecute measures to control epidemics in State institutions.

BE IT ENACTED by the Senate and General Assembly of the State of New Jersey:

1. It shall be the duty of the Board of Health of the State of New Jersey, whenever an epidemic shall occur in any institution maintained, in whole or in part, by the State, to immediately initiate and prosecute vigorously all measures to check and control such epidemics, regardless of and without reference to any local board or boards of health, and to that end such State Board of Health is hereby endowed with full power and authority in the premises.

2. All acts and parts of acts inconsistent herewith are hereby repealed.

3. This act shall take effect immediately.

Approved April 15th, 1908.

The intention of this law is to place the responsibility for the investigation and control of epidemics in institutions directly on the State Board of Health, and avoid such conflicts of power and duties in dealing with institutional epidemics as have in the past

arisen between State and local boards of health and the managers of the institutions. Each year in dealing with institutional epidemics new and perplexing problems are presented. Since the enactment of the law a careful study of each epidemic has been made, and with the co-operation of the management of each institution we have succeeded in limiting the cases of infectious diseases. Contagious diseases were reported and investigated in the following institutions: State Home for Girls, Trenton, four cases of typhoid fever; New Jersey State Hospital, Morris Plains, two cases of typhoid fever; New Jersey State Hospital, Trenton, eleven cases of typhoid fever; New Jersey State Normal School, Trenton, two cases of diphtheria; New Jersey State Village for Epileptics, one case of diphtheria and three cases of typhoid fever. Tuberculosis cases are reported, but are not usually investigated.

Mr. David C. Bowen, the State Inspector in the Division of Medical and Sanitary Inspection, has supervised the investigation of contagious diseases in institutions, and the report of one of these inquiries is given because of interesting features which developed during the inquiry and the use of typhoid vaccination as a prophylactic measure.

TYPHOID FEVER OCCURRING AT THE STATE VILLAGE FOR EPILEPTICS.

As shown by a report, dated August 29th, the first case in this outbreak occurred in a person employed as cook in Bergen Cottage. The patient was a female about forty years of age, who had continuously filled this position for several years past. She was first seen by a staff physician on August 22d, and on the morning of the following day, with a temperature of 103° F., accompanied with headache, nausea, &c., a clinical diagnosis of "intestinal intoxication, suspicious of typhoid" was made. On August 25th a blood specimen, examined in the State Laboratory of Hygiene, gave a positive Widal reaction.

Isolation of the patient was established in the building on August 24th, and the case was removed to the St. Francis Hospital, at Trenton, on August 30th, where a fatal termination occurred on September 7th.

From a careful study of the facts surrounding this case it was determined that the date of onset was between August 15th and

18th, in which case the date of infection most probably took place between August 1st and 5th.

The previous history of the infected person showed that she had been absent from the institution, on a vacation, from September 1st to 15th, inclusive, and again on August 14th and 15th. There is no knowledge that direct exposure to typhoid infection occurred during these absences from the institution, yet this may have been the case. The assumption that infection did take place during either of these leave of absences hardly coincides with the date of the onset.

From the fact that this patient continued to daily perform her duties as a cook, for a period of about one week following the beginning of her illness, and that food was prepared by her for 100 epileptic children and about twenty officials and attendants having supervision over them, it was apparent that a considerable number of persons might have been infected through the food supply.

It was not certain at this time that the source of infection which caused this case had not existed at the institution and that others had not had exposures which might later result in their illness. Diligent search was therefore made to determine this question, and active measures were instituted to prevent the spread of infection from the known foci in Bergen Cottage.

Among the efforts put forth to accomplish this purpose were:

1. Isolation of the case in the house in which it occurred, and the thorough disinfection of discharges, bedding, &c., until the patient has been removed to the hospital.
2. Disinfection and daily cleansing of all parts of the building most likely to become infected.
3. Daily physical examinations, including temperature readings, of all patients and attendants in Bergen Cottage.

Before the expiration of the incubation period had elapsed following the isolation and removal of the infected cook, four other inmates of Bergen Cottage showed suspicious symptoms of the disease and were removed to a building temporarily substituted for use as an isolation hospital. Three of these persons were male, and one a female, thereby suggesting that infection had been introduced among the occupants of both wings of the building.

Clinical symptoms which later developed in two of these cases were confirmed by Widal blood tests made on September 6th and

16th, respectively, and one of the cases proved fatal on September 17th. One other case gave one atypical, then one positive, followed by two consecutive atypical Widal reactions, but did not present clinical symptoms to justifying a diagnosis of typhoid fever. The illness in the fourth case proved to be due to other causes.

The onset in this group of cases was apparently from August 30th to September 6th; the date of infection presumably occurring between August 16th and 26th, therefore during the period of time when the infected cook was performing her duties while in the first stages of the disease which later caused her death.

On September 7th a positive Widal reaction was obtained on a specimen of blood which had been taken from an inmate of Meadowside Cottage. This specimen was taken by a staff physician upon observation of constitutional disturbances, accompanied by an elevation of temperature. The person was a particularly intractable individual from whom no reliable information could be obtained pertaining to his previous history, that would be helpful in making a clinical diagnosis. He was therefore placed in the isolation hospital for observation. The discovery of this suspicious case in Meadowside Cottage, injected a new and somewhat discomfoting factor in the task of determining the source of infection causing the outbreak, and pointed toward a possible focus of infection outside of Bergen Cottage to which the entire population of the village might have been exposed. Water from certain springs which had been much used for drinking purposes fell under suspicion at this time, and they were promptly closed, by order of the management, pending investigation.

The development of the secondary cases in Bergen Cottage made sure of the existence of infection among the persons residing therein, while the suspicious case from Meadowside Cottage pointed toward possible existence of the infection elsewhere.

As a means of detecting infected persons who might not have been discovered by physical examinations, blood specimens were taken for Widal tests from each person residing in Bergen Cottage. This work was begun on September 11th and continued until the danger of other cases developing was believed to have passed.

In the efforts to locate a common source of infection outside of Bergen Cottage the water and milk supplies received special at-

tention. The regular water supply for the institution is derived from two sources, *i. e.*, deep wells and brook water. The brook water is filtered before mixing with that from the deep wells, and the mixed supply is pumped to tanks and distributed under pressure to the various buildings on the institution grounds. Up to the time of this inquiry this general supply was thought to have been entirely satisfactory from the standpoint of safety, having been previously examined by the Division of Sewerage and Water Supplies. There are also several springs on the institution grounds, the water from which had been found particularly palatable and, regarded perfectly safe, was much used for drinking purposes.

As a result of new tests and examination of these sources of supply it was shown that both the general supply and the spring waters contain an excessive amount of coli, showing pollution which might be highly dangerous.

As soon as the results of these examinations were made known to Dr. Weeks, superintendent of the institution, immediate steps were taken to render the water supply safe, by chemical treatment, and to correct defects shown to exist in the construction or management of the filters. And for a time brook water, treated as above stated, was used exclusively, the springs and deep wells being temporarily cut out.

A physical examination was made of all persons working in the dairy as well as those residing in Pine Knoll Cottage, in which the dairy workers are housed. Blood specimens were also taken for Widal reaction from these persons. The physical examinations in this group of patients and employes were negative. A blood specimen taken from one of the employes residing in this cottage gave a positive Widal reaction, and the suspect was removed to the isolation hospital for observation. There being no evidence of recent illness in this case, and the man remaining in normal health, he was released from the hospital after negative results had been secured on several specimens of feces and urine collected from him and examined for typhoid bacilli. This man gave a history of having previously suffered three distinct attacks of typhoid fever, the last occurring about three years ago, which may account for the fact that repeated blood specimens from him gave positive Widal reaction.

Clinical symptoms subsequently clearing up in the suspect taken to the hospital from Meadowside Cottage, and examinations of feces and urine collected from him also proving negative, there remained only the original problem of dealing with infection in Bergen Cottage.

On account of the mental condition of the inmates of Bergen Cottage, mostly "low grade" epileptic children, the physician's task of detecting early symptoms of typhoid was rendered more difficult. Prevention of the spread of the infection by contact among these persons, through their unclean habits, was likewise more troublesome and uncertain than would naturally be found among persons of normal health.

It was therefore deemed advisable by the superintendent of the institution to give the inmates of Bergen, Meadowside and Pine Knoll Cottages the advantage of anti-typhoid vaccinations. It was thought by this treatment to protect the individuals, lessen the danger of the spread of infection, and by this means avert what then threatened to become an extended outbreak, and to lessen the cost of handling the same.

Inoculations were therefore begun on September 13th, and continued until all institution inmates in the three cottages above named had been inoculated. Vaccination was offered to all employes of the institution and was accepted by about one-third of their number. Each subject was given three immunizing doses, administered at intervals of ten days apart, the first dose containing 500 million and the second and third doses 1 billion killed bacteria. The seat of the injections was under the skin of the arm over the insertion of the deltoid muscle. No untoward or unfavorable effect followed the treatment.

Whether or not the immunization of the inmates of Bergen Cottage actually acted as a factor in preventing the occurring of other cases during this outbreak is of course problematical. That the conditions which surrounded the outbreak fully justified the treatment can hardly be doubted.

In considering the cost of protective inoculations for inmates of institutions such as the one in which this outbreak occurred, it would seem that it might be a justifiable prophylactic measure. The cost of the vaccine in this instance amounted to 33 1-3 cents for each individual treated. At this rate the material for vaccinating about 66 persons can be purchased for an amount equal-

ing the salary of a trained nurse for one week. Taking into account the length of time an average typhoid fever case requires the attention of a nurse, and that two nurses are desirable if proper care is to be given in these cases, no argument is necessary to show the advantage from a monetary standpoint, of typhoid vaccinations for those particularly liable to exposure to typhoid fever infection—if this treatment insures the immunity claimed.

The last case was discharged from the hospital on October 2d, forty-eight days following the onset of the first case in Bergen Cottage.

The urgent need of a hospital in connection with this institution has again been demonstrated by the occurrence of this outbreak. It so happened that a new institution building had just been finished, but not yet occupied, as this outbreak occurred. This building was pressed into service as an isolation hospital and would have proved invaluable if an extended epidemic had followed. By a singular coincidence this same thing occurred at the time an outbreak of diphtheria which took place at this institution in the fall of 1909 and again in the fall of 1910. New buildings were nearing completion on both of these occasions and were pressed into use for isolation hospitals. It can hardly be presumed that the time of the completion of new buildings and the occurrence of outbreaks of communicable disease will always coincide in this institution, and the constant use of the dormitory buildings up to their full capacity makes it imperative in the successful handling of such outbreaks that the sufferers be removed to proper quarters for isolation and treatment. Such a place is not now available on the institution grounds.

SUMMARY.

1. The source of infection causing the illness of the cook in Bergen Cottage is not definitely determined, but most likely took place while she was away from the institution grounds.
2. The secondary cases occurring among inmates of Bergen Cottage was evidently contracted from the cook.
3. While this outbreak was apparently not due to an infected water supply, it incidentally brought out the fact that the institution's water supply was polluted and a threatening source of danger.
4. No common source of infection outside of Bergen Cottage apparently existed on the institution grounds.
5. No undesirable results followed anti-vaccinations, and this prophylactic measure may have been useful in averting a more extended outbreak.

CONTAGIOUS DISEASES ON DAIRY PREMISES.

When cases of certain contagious diseases occur in persons residing on dairy premises the attending physician was required by the provisions of chapter 47, laws of 1909, to report the facts directly to the State Board of Health within twelve hours after his professional visit upon the patient. The diseases which were mentioned in the act were those which are more commonly known to be milk-borne. They include scarlet fever, typhoid fever, tuberculosis, diarrhoea and dysentery. While this law met with general compliance by physicians throughout the State there were some who failed to observe its mandates, and it became necessary, in a few cases, to bring legal action for the collection of the penalties provided for.

In the first suit that was brought under the act counsel for the defendant raised a question as to the constitutionality of the title of the act. His point appears to have been well taken and was sustained by the court, and it therefore became necessary to secure additional legislation to correct the defective title of the law. A bill was introduced and passed (chapter 380 of the laws of 1911) at the last session of the Legislature which corrected the title of this act and made some additions to the text of the law which experience had shown to be needed.

The original act required that cases of certain communicable diseases occurring in persons residing on dairy premises should be reported by the attending physician to the State Board of Health. The amended law further provides that cases of such diseases occurring in the persons or families of individuals employed on dairy premises, though they may not reside thereon, shall also be reported by the attending physician direct to the State Board of Health.

The necessity for this requirement is apparent, when we consider that an employe living away from the dairy might have in his family cases of diphtheria or scarlet fever, and after being exposed to the infection go directly to the dairy and take part in the collection of milk. With this addition to the law and with the assurance that the law is constitutional, we are now in a position to enforce its provisions.

It is the practice in every instance where a case of communicable disease is reported among the workers on a dairy premises to learn, by personal investigation, all the facts surrounding the case. The inspector reports upon the isolation of the patient and attendant, and if there is apparent liability of the milk produced upon the premises becoming infected. If conditions are found which are likely to result in the infection of the milk a notice is served upon the owner of the dairy forbidding the sale or transportation of milk produced, stored, or kept upon the premises, until such time as the prohibition order may be withdrawn. By a special provision of chapter 67 of the laws of 1911, under which the prohibition notice is served, the sale of cream, butter, or other milk products, is included in the prohibition.

If, however, an arrangement can be made by which milk can be sold without endangering the public health this is permitted under such supervision as the circumstances surrounding the case appear to warrant.

It has been our experience that dairymen, with few exceptions, are willing to observe the reasonable precautionary measures demanded by the State inspectors and, in comparison with the number of dairies in which communicable diseases have occurred, few prohibition orders against the sale of milk have been issued. We believe the enforcement of the law requiring the reporting of contagious diseases on dairy premises and the prompt action taken by representatives of this division has lessened in a marked degree the number of cases of communicable diseases which were formerly traceable to milk infected at the dairy. A table following this section of the report shows the location of dairies upon which cases of contagious diseases have occurred during the year ending October 31st, 1911, the nature of the diseases reported, and the number of dairies on which it was found necessary to prohibit the sale of milk, together with the dates on which the orders were issued and withdrawn.

The report of an investigation of an outbreak of typhoid fever, which occurred on a dairy premises located in Lumberton township, Burlington county, is also appended because of the unusual extent of the infection in the dairyman's family and of other rather interesting lines of inquiry connected therewith.

TYPHOID FEVER ON DAIRY PREMISES IN BURLINGTON COUNTY.

In accordance with instructions an investigation has been made of an outbreak of typhoid fever on the dairy premises located in Lumberton township, Burlington county. The owner of the dairy conducts a farm and a small dairy on which about fifty quarts of milk are produced daily and sold direct to consumers in Hainesport. There are nine members in the family, consisting of the father, mother and seven children, whose ages are between six and twenty years. A physician was called to see one of the children on July 23d, 1911. On the following day other members of the family were complaining.

Suspecting that the illness from which members of this family were suffering might be due to typhoid fever infection, blood specimens forwarded to the State Laboratory, from three members of the family, gave positive Widal reactions on July 29th. On August 2d blood specimens sent from three others gave positive reactions, and later the clinical diagnoses of typhoid fever in the remaining members of the family were confirmed by laboratory tests.

Acting on the advice of the attending physician the sale of milk was discontinued on the infected premises on July 29th, and the cows and utensils were moved to an adjoining farm, where the business was continued. Being assured that all cans and utensils that had been formerly used on the infected dairy had been sterilized, and that no member of the infected family was then assisting in the dairy work, no order was served prohibiting the sale of the milk.

The history of the outbreak showed that, as near as determined, the first case of illness on the premises occurred on or about July 20th. Other cases followed in quick succession, and within a week every individual of the household gave evidence of suffering from the infection. The explosive nature of the outbreak suggested that the infection came from a common source and that it had been contracted by all at about the same time. The time infection took place was presumably during the first week in July.

Considering these facts it was thought that the source of infection might be traced with a reasonable degree of certainty.

This was not so, however, for each line of inquiry pursued, when subjected to close analysis, ended with negative results.

A careful consideration of the facts obtained indicates that infection must have occurred on the premises, yet no clue to the channel through which it was introduced was found.

There is no reason to suspect that the cases were due to contact, nor that they were the result of fly infection, although these pests were numerous in all parts of the dwelling in which food was prepared and served.

The food supply was carefully inquired into without shedding any light on the subject under inquiry, yet some important article of diet may have been overlooked as information along this line was rather unsatisfactory.

Considering the source of infection to have existed on the dairy premises the following named conditions offered the most probable explanations:

1. *Water Supply.* There are two wells on the premises, one at the stable building and one at the dwelling. Water for use in the household and for washing milk cans and utensils is taken from the well at the house. This is a dug well, about twenty feet in depth, partly located beneath the kitchen floor. About one-third of the diameter of the well extends out from beneath the building and has a loose-fitting board cover. The pump is in the kitchen, and waste liquids are conveyed from the pump box through a pipe drain to a point about forty feet distant from the well, where a large pool of decomposing liquids formed on the surface of the ground. A leaching privy vault is located about sixty feet distant from the well. The surface and subsoil surrounding the well is a sandy loam with an underlying strata of gravel, thus affording good seepage. A sample of water was collected from this well on July 31st and examined, both chemically and bacteriologically, in the State Laboratory of Hygiene. The chemical analysis showed gross pollution, and coli were present in .1 cc. Efforts to isolate typhoid bacilli in this sample of water were unsuccessful.

Other persons than members of the family are known to have frequently used water from this well with no bad results and there appears no sufficient reason to assume that the well, though grossly polluted, contained typhoid infection.

2. *Privy.* As already shown, the privy is located about sixty feet from the dwelling. It is of the objectionable type so frequently found in rural districts and on small dairy farms. The back of the privy building is open below the seat line, affording chickens and other domestic animals easy access to the filthy accumulations overflowing the ground at the rear of the building. Doubtless many of the flies seen in and about the house were bred in or fed upon the human excreta so exposed beneath and around this privy building.

3. *Fertilizing Material.* A theory was advanced that infection had been brought to the dairy in stable manure procured at an undertaker's establishment. It appears that manure had been brought to the farm from this source for a period of more than two years. It is claimed that this manure frequently contained offensive matter, including evacuations from human bowels, bits of soiled garments, and, on one occasion, it is claimed that a portion of the

internal organs of a human body was found in the manure. These foreign substances were supposed to have found their way into the manure from a morgue and dissecting room maintained in the stable building on the undertaker's premises. It was further claimed that the body of a person dying of typhoid fever, in the Burlington County Hospital, had been prepared for burial at this undertaker's establishment just prior to the removal of a load of manure from the premises at about the time the family is believed to have become infected. This story was carefully investigated and it was found that this theory of the source of infection lacked some essential facts to support it, notwithstanding the apparent correctness of the statements about the foreign materials sometimes found in the manure.

It is claimed that the mother took entire charge of the milk production, including milking the cows. The milk was distributed to consumers by one of the sons. For a period of at least ten days, from the beginning of the outbreak, until the production of milk was discontinued on the premises, the mother acted as nurse to members of her family ill with typhoid fever, and a portion of this time she was also a sufferer from the disease. As above stated, the cans and utensils were washed in polluted well water. And yet no case of the disease is known to have occurred in persons who consumed the milk produced on these infected premises. Three of the nine cases were treated in the Burlington County Hospital and the others at their home. All recovered.

The cows were taken back to the dairy during the first week in September, and no recurrence of the disease has made its appearance up to this date.

TABLE 1.—SHOWING LOCATION OF DAIRY PREMISES ON WHICH CONTAGIOUS DISEASES WERE REPORTED DURING YEAR ENDING OCTOBER 31, 1911.

LOCATION OF DAIRIES.		Diphtheria.	Scarlet fever.	Typhoid fever.	Typhus fever.	Dysentery.	Place to which milk was shipped.	SALE PROHIBITED.	
Sanitary District.	County.							Date of prohibition.	Date order withdrawn.
Pleasantville Borough	Atlantic	1				Pleasantville		Isolation.	
Garfield Borough	Bergen	1				Garfield		Local Board.	
Garfield Borough	Bergen	1				Garfield		Local Board.	
Garfield Borough	Bergen	2				Garfield		Local Board.	
Bordentown Township	Burlington	1				Garfield		Local Board.	
Burlington City	Burlington	1				West End		Isolation.	
Lumberton Township	Burlington	1				Burlington		Isolation.	
Springfield Township	Burlington	1				Hainesport	July 31.	Sept. 12.	
Springfield Township	Burlington	2				Wrightstown Creamery		Isolation.	
Springfield Township	Burlington	1				Camden		Isolation.	
Springfield Township	Burlington	1				Wrightstown Creamery		Isolation.	
Westampton Township	Burlington	1				Palmyra and Mt. Holly		Isolation.	
Delaware Township	Camden	1				Camden		Isolation.	
Hopewell Township	Cumberland	1				Bridgeton		Isolation.	
Stow Creek Township	Cumberland	2				Philadelphia, Pa.	Jan. 6.	Jan. 16.	
South Orange Village	Essex	1				South Orange		Local Board.	
Clayton Borough	Gloucester	1				Clayton	Sept. 21.	Nov. 6, '11.	
Clayton Borough	Gloucester	1				Clayton	Sept. 22.	Oct. 13.	
Harrison Township	Gloucester	2				Andubon		Isolation.	
Mantua Township	Gloucester	1				Gloucester City		Isolation.	
Clinton Borough	Hunterdon	1				Roselle Park		Isolation.	
Clinton Township	Hunterdon	2				Annandale Creamery	Oct. 28, '10.	May 25, '11.	
Readington Township	Hunterdon	1				North Branch Creamery		Isolation.	
Readington Township	Hunterdon	1				Readington Creamery		Isolation.	
Readington Township	Hunterdon	1				Readington Creamery		Isolation.	
Readington Township	Hunterdon	1				North Branch Creamery		Isolation.	
West Amwell Township	Hunterdon	1				Butter made (sold in Lambertville)	Nov. 28.	Dec. 19, '10.	
West Amwell Township	Hunterdon	1				Butter made	Nov. 30.	Dec. 19, '10.	
West Amwell Township	Hunterdon	1				Trenton		Isolation.	
West Amwell Township	Hunterdon	1				Lambertville	Mar. 20.	Apr. 17, '11.	
West Amwell Township	Hunterdon	1				Lambertville		Isolation.	
West Amwell Township	Hunterdon	1				Lambertville		Isolation.	
Ewing Township	Mercer	1				Trenton		Isolation.	
Hopewell Township	Mercer	1				Lindly Sta., Pa.		Isolation.	

TABLE 1.—SHOWING LOCATION OF DAIRY PREMISES ON WHICH CONTAGIOUS DISEASES WERE REPORTED DURING YEAR ENDING OCTOBER 31, 1911—Continued.

LOCATION OF DAIRIES.		Diphtheria.	Scarlet fever.	Typhoid fever.	Typhus fever.	Dysentery.	Place to which milk was shipped.	SALE PROHIBITED.	
Sanitary District.	County.							Date of prohibition.	Date order withdrawn.
Hopewell Township	Mercer	1				Trenton		Isolation.	
Hopewell Township	Mercer	1				Frankfort, Pa.		Isolation.	
Hopewell Township	Mercer	1				Philadelphia, Pa.		Isolation.	
Hopewell Borough	Mercer	1				Hopewell		Local Board.	
Trenton City	Mercer	1				Trenton		Isolation.	
West Windsor Township	Mercer	2				Trenton	Jan. 22.	Feb. 27, '11.	
East Brunswick Township	Middlesex	1				South River		Isolation.	
Monroe Township	Middlesex	1				Long Branch		Isolation.	
North Brunswick Township	Middlesex	1				New Brunswick		Local Board.	
North Brunswick Township	Middlesex	1				New Brunswick		Isolation.	
South Brunswick Township	Middlesex	1				Trenton		Isolation.	
Atlantic Township	Monmouth	1				Shrewsbury		Isolation.	
Neptune Township	Monmouth	1				Asbury Park		Isolation.	
Wall Township	Monmouth	1				Brielle		Isolation.	
Dover City	Morris	1				Dover		Isolation.	
Passaic City	Passaic	1				Dover		Local Board.	
Paterson City	Passaic	1				Paterson		Local Board.	
Wayne Township	Passaic	1				Paterson		Local Board.	
Wayne Township	Passaic	1				Paterson		Local Board.	
Lower Alloways Creek	Salem	1				Warnersville Creamery		Isolation.	
Pilesgrove Township	Salem	1				Philadelphia, Pa.		Local Board.	
Pittsgrove Township	Salem	1				Elmer	Oct. 27.	Dec. 29, '10.	
Pittsgrove Township	Salem	1				Philadelphia, Pa.	Oct. 9, '11		
Upper Pittsgrove Township	Salem	1						Discon. Sale.	
Bedminster Township	Somerset	2				Peapack		Local Board.	
Bedminster Township	Somerset	1				Peapack		Isolation.	
Branchburg Township	Somerset	1				North Branch Creamery		Local Board.	
Hillsboro Township	Somerset	1				New Brunswick		Discon. Vol.	
Montgomery Township	Somerset	2				Hopewell Creamery		Isolation.	
North Plainfield Borough	Somerset	1				North Plainfield		Local Board.	
Frankfort Township	Sussex	1				Borden's Creamery	Apr. 24.	May 26, '11.	
Hampton Township	Sussex	1				Borden's Creamery		Isolation.	
Newton Township	Sussex	1				Newton		Isolation.	
Stillwater Township	Sussex	1				Fulbom's Creamery		Isolation.	

TABLE 1.—SHOWING LOCATION OF DAIRY PREMISES ON WHICH CONTAGIOUS DISEASES WERE REPORTED DURING YEAR ENDING OCTOBER 31, 1911—Continued.

LOCATION OF DAIRIES.					SALE PROHIBITED.		
Sanitary District.	County.	Typhoid fever.	Tuberculosis.	Dysentery.	Place to which milk was shipped.	Date of prohibition.	Date order withdrawn.
Sussex Borough	Sussex	1			Horton & Lewis' Creamery		Isolation.
Wantage Township	Sussex		1				Isolation.
Wantage Township	Sussex		1		Horton's Creamery		Isolation.
Fanwood Township	Union	1			Plainfield		Local Board.
Garwood Borough	Union	1			Garwood		Isolation.
Plainfield City	Union	1			Plainfield		Local Board.
Union Township	Union	1			Newark		Isolation.
Union Township	Union	1			Union		Isolation.
Union Township	Union	1			Maplewood and South Orange		Isolation.
Lopatcong Township	Warren	1			Easton, Pa.		Isolation.
Washington Township	Warren		1		Junction, N. J.		Isolation.

SANITARY INSPECTION OF SCHOOL BUILDINGS.

Under the provisions of the original act creating the State Board of Health and defining its powers and duties it is required that investigations shall be made into the sanitary conditions of school buildings. While investigations have been conducted of school buildings in former years, in special cases, where some glaring defect was alleged to exist, no uniform and systematic method of conducting these inspections was inaugurated until the past year. The following blank form has been prepared for use in this work:

BOARD OF HEALTH OF THE STATE OF NEW JERSEY.

DIVISION OF MEDICAL AND SANITARY INSPECTION.

RECORD OF SANITARY INSPECTION OF SCHOOL BUILDING.

1. Name of school building.....
 2. Location
Town County
 3. School district
 4. Name and post-office address of Principal.....
 5. Name and address of Secretary of the Board of Education or District Clerk
 6. Total number of class-rooms.....
 7. Enrollment of pupils..... Average daily attendance.....
 8. Size of lot.....
 9. Surface covered by buildings.....
 10. Height of building.....
 11. Date of erection.....
 12. Material of construction.....
 13. Nearness and height of surrounding buildings.....
 14. Fire escape on building.....
 15. Yard, for what purpose used.....
 16. Privy vault on premises..... Size.....
Location
 - Condition
 17. Cesspool..... Construction.....
Condition
 18. Any objectionable accumulation on premises or adjoining premises?.....
- CELLAR.
19. Cellar under entire building.....
 20. Depth beneath ground surface.....
 21. Material and condition of cellar bottom.....
 22. Number and size of windows.....
 23. Is cellar well lighted?.....
 24. Is cellar damp?.....

PLUMBING, DRAINAGE AND WATER-CLOSET APARTMENTS.

25. Is building connected with sewer?.....
26. Any leaks or defects noted in drains?.....
27. Size and location of water-closet apartments.....
28. Material and condition of floors.....
29. Number and size of windows opening to outer air.....
30. Ventilation of apartment.....
31. Cleanliness of apartment.....
32. Number and style of water-closets.....
33. Are water-closets in good repair?.....
34. How flushed?.....
35. Number and style of urinals.....
36. Are urinals in good repair?.....
37. How flushed?.....
38. Cleanliness of fixtures.....
39. Any disinfectant or deodorant used in fixtures or apartment?.....
Kind.....
40. Are there facilities for pupils to wash hands after using closets or urinals?.....

HEATING, LIGHTING AND VENTILATION.

41. Method of heating.....
42. Method of lighting.....
43. Method of ventilation.....
44. Location of fresh air intake.....
45. Size and construction of fresh air duct.....
46. Any visible sources of contamination of fresh air supply?.....

WATER SUPPLY.

47. Source of water supply.....
48. Is water supply delivered through tank?.....
Location..... Condition.....
49. Location of well.....
50. Is well driven or dug?.....
51. Depth..... How covered?.....
52. Surroundings.....
53. Sample taken..... Number..... Result.....
54. Are drinking cups used in common?.....
55. Are there drinking fountains in building?.....
Number..... Location.....

HALLS.

56. Length..... Width..... Height.....
57. Exits.....
58. Light.....
59. Ventilation.....
60. Do doors swing in or out?.....
61. Cleanliness of hall.....

CLASS-ROOMS.

62. Designate room..... Grade.....
Total enrollment..... Greatest average attendance for any preceding month.....
63. Size: Length..... Width..... Height.....
Cubic contents.....
64. Square feet of floor space per pupil.....
65. Cubic feet of air space per pupil.....
66. Number and size of windows.....
67. Percentage of light to floor space.....
68. Light enters from E., W., N., S.....
69. Are there window shades to control volume of light.....
70. Desks face E., W., N., S.....
71. Color and finish of ceiling and side walls.....
72. Do doors swing in or out?.....
73. If swinging doors, have they plate-glass panels?.....
74. Style of desks and seats.....
75. How frequently are seats and desks adjusted to pupils?.....
76. Adjustment at time of inspection.....
77. Material of construction and condition of floor.....
78. Number, size and location of fresh air inlets in class-room.....
79. Number, size and location of vitiated air outlets.....
80. Amount of fresh air entering through inlets per minute.....
81. Temperature of air at inlet..... Outlet.....
At breathing line.....
82. Humidity of air in room.....
83. Was air tested for CO₂?..... Result.....
At what time?.....
84. Weather conditions and temperature of air out of doors.....
85. Objectionable odors noted in air in class-room?.....
86. Are furnishings and ledges free from dust.....
87. Any facilities for washing hands?.....
88. Are clean towels and soap provided?.....
Kind of towels.....
89. Are slates used by pupils?..... If so, how cleaned?.....
90. Are individual pencils and penholders used?.....
91. Are pencils and penholders distributed and collected daily?.....
Are they disinfected after each collection?.....
How?.....
92. Location of cloak-room.....
93. Separate compartment for each pupil?.....
94. Light and ventilation of cloak-room.....
95. Is approach to fire escape clear?.....

MEDICAL INSPECTION.

96. Name and address of Medical Inspector.....
Date of appointment.....
97. Frequency of Inspector's calls.....
98. Has Board of Education adopted rules for guidance of Medical Inspector?
- (Procure copy if available.)
99. Are blank forms used by Medical Inspectors in making records?.....
- (Procure copy if available.)
100. Number of lectures given before teachers by Medical Inspector during each term
101. Are unvaccinated pupils or teachers permitted to attend school?.....
102. Number of unvaccinated pupils in school..... Teachers.....
103. Are pupils or teachers residing in dwellings in which infectious disease exists excluded from school?.....
104. Are pupils and teachers required to present a written permit upon return to school after exclusion on account of infectious disease?.....
- Who issues permit?.....

JANITORIAL SERVICE.

105. Method, frequency and time of sweeping class-room floors.....
106. How is dust removed from furniture and ledges?.....
107. Are floors oiled?..... How frequently?.....
108. Method and frequency of scrubbing floors.....
109. Method and frequency of cleaning desk-tops, chairs, hand-rails, door-knobs and casings
110. Method of disinfecting school-rooms after a case of infectious disease occurs
- By whom performed?.....
111. Describe any appliances for disinfecting kindergarten equipment.....
112. How frequently used?.....
113. Has school a gymnasium?.....
- Are there special instructors?.....
114. Any facilities for bathing?.....
- Describe them
- Date.....

Inspector.

No legal power has been conferred upon the State Board of Health to require improvements in conditions inimicable to health found to exist on school premises, and in order that the information gathered from inspections made of such buildings by this division might be used to bring about the desired improvements, where objectionable conditions are found to exist, an arrangement has been made by which the results of the inspections are placed in the hands of the State Board of Education, which has mandatory power under the school laws to require such improvements as are found necessary in each individual case.

The results of the work thus far accomplished in the inspection of public school buildings has clearly shown that much good might result from a thorough and systematic sanitary inspection of every school building in the State. There are in the State of New Jersey over two thousand school buildings which would require at least two inspectors for more than a year to cover the entire field. Mr. George T. Palmer, an inspector of the Division of Medical and Sanitary Inspection, was delegated to make inspections of school buildings, and a summary of the inspections of school buildings and a summary of the facts contained in the reports of these inspections follows:

During the period from March 1st to June 1st of the current year sanitary inspections of thirty public school buildings have been made.

RURAL SCHOOLS.

The major portion of the school inspection work has been done in rural schools having but one or two class-rooms. Eighteen of the rural school buildings inspected are located in Mercer county, two in Hunterdon, two in Somerset and one each in Atlantic, Camden and Morris.

Rural school buildings being isolated and out of reach of public water supplies or public sewers, such matters must be looked after by each school separately. One of the most glaring omissions in sanitation at rural schools is the lack of proper provision for the storage and disposal of excrement.

PRIVY ACCOMMODATIONS.

All of the 25 rural school buildings inspected are provided with outdoor privy buildings. At 19 school premises excrement is deposited directly upon the surface of the ground beneath the privy building. Six privies were found beneath which there were earth or stone lined vaults, and only three buildings were provided with portable wooden box containers. At 11 schools the privies were so constructed that excrement drained out from beneath the building onto the adjoining ground or was deposited there primarily. Not a single privy building was found to be screened to prevent

fies from gaining access to the accumulations beneath the seats. In several instances the back walls of the building did not extend to the ground so that the accumulated filth beneath the building was not only exposed to view but also accessible to fowls and other domestic animals having access to the school grounds. The privy buildings were for the most part in good repair, although in two instances boards had been broken from the sides of the building, and in two other instances the seats were demolished and had fallen down upon the accumulations beneath the building. Only four of the schools can be credited with having clean privy buildings. The seats, floors and interior walls in some cases were soiled to a disgusting extent. Lighting and ventilation of the privy buildings is another feature universally neglected. At only one school were the privy buildings provided with adequate window openings. In a few instances there was a narrow slit in the door or sidewalls through which air and light could enter. The proper lighting of privy buildings is worthy of considerable attention. It is not at all strange that a child should soil the seat or his person in using a privy building that is utterly dark when the door is closed. A dark privy is thus conducive to filthy conditions and unclean habits, and demands more frequent cleaning which, if neglected, discourages pupils from making proper use of the building which may be followed by harmful results to the pupil. The presence of a wooden fence about the privy to screen the doorway at least permits leaving the door open to admit light while the privy is in use, but the door is not intended for this purpose and should not be depended upon to supplant adequate window space. Toilet paper was not furnished at any of the privies inspected.

WATER SUPPLY.

Drinking water is almost invariably taken from wells. Of the 25 rural schools, 12 obtained water from wells less than 25 feet in depth, 8 from wells more than 25 feet deep, one from a spring and one from the mains of the town supply. In three cases the depth of the well was not determined. Nine schools have either wells or springs on the school premises, 15 depending upon wells located on neighboring private property.

It was not convenient to take samples from all of the different supplies for analysis and nothing can be said as to the quality of the water in these cases. Six supplies were subject to surface drainage, however, or the wells had a defective curb protection. One private shallow well was located on the edge of a barnyard. At 16 schools drinking water was stored in the class room or cloak room in an uncovered pail, where it was exposed to contamination by dust, unclean drinking cups and the soiled hands of pupils. Only two schools were provided with covered metal water coolers from which water was drawn through a faucet.

A common drinking cup was found in use at each school visited. At many schools a majority of the children were provided with individual drinking cups, but a common cup was also accessible near the water pail, or at the well.

WASHING FACILITIES.

A portable wash basin was generally found near the water pail, but soap and towels were rarely provided. In cases where towels were furnished the supply was never sufficient, a single towel frequently serving for the use of 30 pupils for two weeks. In a few schools some pupils had individual towels. In some cases towels are furnished by the teacher or in turn by the pupils, the school authorities making no provision for either soap or towels.

HEATING.

Seventeen schools were heated by coal stoves located in the classroom. Six schools were heated by hot air furnaces located in the cellar, and two schools had steam heat with direct radiation. The objection to stoves located in the classroom must be apparent. Pupils seated near the stove are subjected to uncomfortably high temperatures, while at the same time pupils further removed from the source of heat may actually suffer from cold. The single small classroom of one school, in Montgomery township, heated by a stove in the center of the room, was most uncomfortably warm at the time of the inspection. Several schools, with a single classroom, were provided with hot air furnaces located in the cellar.

This method of heating is a great improvement over stove heating, as it not only furnishes more even temperature but also improves the ventilation of the classroom.

VENTILATION.

Rural schools inspected depend for their ventilation wholly on the natural exchange of air which takes place around doors and windows.

POPULATION OF CLASSROOMS.

Of the 39 classrooms, representing 25 rural schools, 7 had a floor space of less than 18 square feet per pupil, and 3 had less than 15 square feet per pupil. Ten classrooms had less than 200, and one less than 150 cubic feet of air space per pupil. The rural classrooms are not, however, as subject to overcrowding as school-rooms in city schools.

LIGHTING OF CLASSROOMS.

In thirty class rooms the ratio of light area to floor space was less than 20 per cent. In 16 classrooms this ratio was less than 15 per cent. The amount of light entering the classroom is sometimes further diminished in the rural school buildings by the close proximity of shade trees thereto. Nine of the 39 rural schools received light from the left, rear, or left and rear of the pupils. There were four classrooms in which pupils sat directly facing the windows.

SEATS AND DESKS.

Non-adjustable seats and desks, accommodating two or more pupils, were in use in 26 classrooms. Eight rooms were fitted with single non-adjustable seats and desks, and in only three rooms were single adjustable seats and desks in use.

CLOAK ROOMS.

Nearly half of the rural schools visited were without separate cloak rooms, pupils' coats, hats, rubbers, umbrellas, lunch boxes, &c., being kept in the classroom where the odors and dust from the fabric of the garments is added to the already vitiated air in the classroom. There was no provision for separating the garments belonging to different pupils, hooks being placed so close together that adjoining garments hung in direct contact.

JANITORIAL SERVICE.

Rural schools are for the most part without the services of a paid janitor. Sweeping, dusting, cleaning of woodwork and caring for the stove or furnace, is done by the teacher or some pupil who occasionally receives slight remuneration for this service. Inquiry shows that portions of the woodwork of the classroom which is not subject to frequent handling is rarely washed with soap and water. Sweeping is usually done three times a week, and the floors do not receive a scrubbing oftener than once a year.

CITY SCHOOLS.

Inspections have not been made of a sufficiently large number of the large buildings found in more thickly populated centers to warrant drawing general conclusions. Enough work has been done, however, to justify the statement that overcrowding, bad lighting of classrooms, inadequate ventilation and heating of buildings and poor janitorial service is more common, even in comparatively recently constructed school buildings, than might be suspected.

Determinations of carbon dioxide and humidity have been made in a number of rooms in some of the larger buildings inspected. These tests were made by means of an instrument of the Peterson and Palmquist pattern, modified by Dr. C. T. Graham-Rogers, of the New York State Department of Labor. In this test a measured amount of air is washed in caustic potash, the subsequent re-

duction in volume of the air representing the CO₂ content. Air samples and temperature readings were usually taken in the center of the classrooms on a line with the heads of the pupils.

CONCLUSIONS.

In concluding, several matters might be generally touched upon that concern both urban and rural schools alike.

Now that the law prohibiting the use of common drinking cups has become effective the way is paved to abolish this common offender against school hygiene. It was apparent that the real danger from the common drinking cup was not fully appreciated by either pupils or teachers. The purpose of banishing the common drinking cup is to the end that one of the ready means of transferring the saliva from the mouth of one person to that of another might be removed. In several instances individual cups were found grouped together on a window sill or shelf and different children were observed to select from the array before them the same cup that had just been used by another. At one of the rural schools a girl pupil very proudly displayed her individual drinking cup and then, at recess period, she presided at the pump and furnished an admiring group of friends with drinking water from this same individual cup. Some satisfactory type of drinking fountain is the solution for school buildings.

Adjustable seats and desks are no more commendable than the non-adjustable type unless advantage is taken of their adjustability. In several instances pupils were observed sitting at seats and desks which had not been adjusted to their height. So long as the pupils made no complaint the teacher made no effort to have the seat properly adjusted.

The cloak rooms in all schools visited are so arranged that wraps belonging to different pupils overlap those on adjoining hooks. The hooks should be further separated or partitions put in to separate the garments. Numbering the hooks and having pupils always use the same hook falls short of accomplishing the desired purpose.

Repeated emphasis might well be placed on the desirability of having light, spacious and well ventilated toilet apartments. The use of white painted woodwork, white tile or porcelain walls show

the observer at a glance where a lack of cleanliness exists. Concealing dirt does not eliminate it.

The use of disinfectants and deodorizers in toilet apartments is unnecessary if these apartments are properly cleaned and ventilated. The odor from some of the so-called deodorizers are as objectionable, if not more so, than the odors they are intended to effect. The suspension of volatile disinfecting substances about the rooms and halls of a school building is of no practical value. At several school buildings this custom was followed. The odor of the disinfectant was strong enough to be irritating to the mucous membrane of the eyes, nose and throat but not powerful enough to destroy micro-organisms in the surrounding air, besides their presence creates in the minds of teachers and pupils a false sense of security, so that important and well advised precautions are apt to be neglected.

MEDICAL INSPECTION.

An amendment to section 229, chapter 92 of the laws of 1909, reads, in part, as follows:

"Every board of education shall employ a competent physician to be known as the medical inspector and fix his salary and term of service. Every board of education shall adopt rules for the government of the medical inspector which rules shall be submitted to the State Board of Education for approval.

"The medical inspector shall examine every pupil to learn whether any physical defect exists, and keep a record from year to year of the growth and development of each pupil, which record shall be the property of the board of education, and shall be delivered by said medical inspector to his successor in office. Said inspector shall lecture before the teachers at such times as may be designated by the board of education, instruct them concerning the methods employed to detect the first signs of communicable disease and the recognized measures for the protection of health and the prevention of disease."

Medical inspectors had been employed in 29 of the 30 schools inspected. It could not be learned from the teachers whether or not local boards of education had adopted rules outlining the work for their medical inspector. In 22 schools the medical inspectors had visited the school at least once a month. Records of

physical examination of pupils had been made, but these records were in most cases in the custody of the inspector and were not at the school building. At two schools in Montgomery township no visits of the medical inspector had been made from September 1st, 1910. to March 1st, 1911. The medical inspector at another school in Hunterdon county had made two visits in seven months. The giving of lectures by the medical inspector before the teachers, as provided for in the law, is not commonly followed, as no lectures had been given in 24 of the schools visited. Failure to observe this provision of the law probably lies more with the boards of education who are expected to set a date for such lectures.

Statistics on vaccination are somewhat meagre because of the absence of the physical examination records from the school building at the time of the inspection. From the records inspected of 2,200 pupils it was found that 224, or 12 per cent., were unvaccinated. Nearly the entire number of unvaccinated pupils belong to the rural schools.

NUISANCES.

The abatement of nuisances is one of the powers conferred upon local boards of health by legislative enactment. This branch of service rendered by local boards is not of such importance as to warrant the time and money spent upon it. There are so many other branches of the work yielding immediate and valuable results such as the oversight of communicable diseases, the dealing with the problem of clean milk and the safe water supplies, that the abatement of nuisances seems of minor importance. To the general public, however, the abatement of nuisances is thought to form the principal part of local board of health work, and private individuals are quick to advise local health authorities of existing nuisances and loudly call for their abatement to the exclusion of work having more direct bearing on public health but not so apparent to the untrained observer.

There is, however, a relation between nuisances of a certain character and public health work which local health authorities cannot ignore and over which they must exercise their legal authority. Among these are accumulations of filthy materials where flies may breed, pond holes and undrained areas in which mosquito larva

breed, overflowing cesspools and privy vaults, in which flies have access to human excrement and deposits or accumulations of polluting materials near wells or on public watersheds and other nuisances of a similar type. There is also an indirect relation which nuisances bear to health, applying more especially to nuisances that give rise to foul odors, injurious trades, and bad housing conditions which in time may lower the general health tone and renders one more liable to the invasion of infection.

The laws of our State very wisely leave to each local board of health the power to determine and define what nuisances are, but the law does not give such boards the right to define nuisances which, although a source of discomfort, are not necessarily a source of ill health.

Local boards of health have been slow to learn that the underlying principle of our health law is that in each locality the rules governing the abatement of nuisances shall be laid down by ordinance. They do not generally realize that the many subjects on which the State Legislature has authorized them to pass ordinances afford them ample opportunity to provide by ordinance a most excellent system of sanitary government. They do not realize that without supplemental local legislation their powers are confined within very narrow limits. The first step therefore in dealing with nuisances is for local boards of health to pass ordinances declaring and defining what nuisances are dangerous to the public health and providing a penalty for the violation of the same.

There is a great variance in ordinances adopted by various boards of health bearing on the same subjects. This is a subject, however, that has been somewhat difficult of control, and efforts thus far put forth by the State Board of Health have not been fruitful of results in this respect. Several difficulties stand in the way. *First.* The law extends to local boards power to pass ordinances on given subjects, leaving the framing of the ordinance to bring about the desired result in their hands. It is not strange that, under these conditions, and particularly so when the framing of such ordinances is, at times, performed by persons unfamiliar with the subject on which they are to establish laws, many ordinances are defective.

Second. Local boards about to adopt ordinances frequently copy from those adopted in other localities and are not always fortunate in selecting as a guide ordinances which have been wisely

prepared and recently revised to conform to the latest knowledge and practice in sanitary administration.

Third. It sometimes occurs that ordinances applying to a particular condition in one sanitary district have no practical application in another.

It would, therefore, be of great benefit if a method could be devised by which more uniformity could be brought about in the adoption of local health ordinances.

Several years ago the State Board of Health formulated a code of ordinances as a guide for the use of local boards of health in cities, boroughs and townships of the State. This form has now become obsolete, however, by reason of accumulated knowledge in sanitation and improved methods of application of this knowledge to preventative health work.

The aid of this division has been sought and given in the investigation and abatement of nuisances in 24 sanitary districts throughout the State during the past year, beside, innumerable cases have arisen in which advice has been given to local board officials as to the proper legal procedure to follow in the abatement of nuisances.

ANTI-TUBERCULOSIS CAMPAIGN.

By the authority of an act of the Legislature passed in 1910 a special appropriation was made available on November 1st, of the present year, the moneys appropriated being for the purpose of enabling the State Board of Health to carry on an educational campaign against tuberculosis. The Board is at the present time preparing to carry on this campaign more vigorously than ever before. Heretofore the Board has issued circulars on the prevention of tuberculosis, but most of the diffusion of information as to the care and prevention of the disease has been accomplished through voluntary organizations. The splendid work of these charitable and philanthropic agencies, both State and local, has been of inestimable value in molding public opinion and securing adequate legislation as well as spreading the knowledge concerning the methods of prevention. There has been a growing belief among a number of these organizations that the educational work which is really the foundation of all measures looking toward the prevention of tuberculosis should be carried on by the State. The result is that the special law has made the proposed educational

campaign by the State Board of Health possible. The tools for use in conducting this work are already being put in shape. The oversight and supervision of the work is under the Division of Medical and Sanitary Inspection of the State Board of Health. Dr. Millard Knowlton, who has been engaged in similar work in New York City, has been selected to carry on the campaign. An exhibit is in the process of construction. Literature for distribution at the exhibit to be held and through other channels is being prepared for publication, and all the preliminary arrangements are being pushed forward with as much speed as is compatible with thoroughness. It should be possible to begin actual work soon after the first of the year 1912. An effort will be made to have the exhibit as interesting and practicable as possible. It will include some new and unique features that cannot fail to engage the attention of the people. A feature will be made of moving pictures. The many excellent films now obtainable on tuberculosis and other health subjects will be shown. The tentative plan is to hold the exhibit open for a week in a given community. Prior to the exhibition the representative of the State Board of Health will make an especial effort to interest the women's clubs, the lodges, the labor unions and the boards of education of the locality in the movement. The complete program for the control and prevention of tuberculosis in the State will be directed along three lines:

1. The registration of all cases by the State Board of Health which must be accomplished with the co-operation of local boards of health and physicians.
2. The education of the public by means of the exhibit, the distribution of literature, lectures, newspaper publicity, moving pictures, posters, instruction in schools, and such other methods as may be advantageously employed. In this service the State Board of Health will work in co-operation with the various other agencies and organizations with the local communities, and local boards of health and local organizations will co-operate in their own communities.
3. The provision of adequate facilities for hospital, dispensary, home and sanatorium care of consumptives. Primarily this must be done by the local communities, chiefly by the counties. The State Board of Health will co-operate with advice and information, or in any other way within its power.

The carrying out of this comprehensive program cannot be entrusted wholly to any one agency. There is something for every one to do. The State Board of Health desires to render all possible service, and to co-operate with all good citizens in relieving human suffering and saving human lives. Such efforts as have been outlined will, if successfully carried out, doubtless lead to great achievements.

Report of the Division of Creameries and Dairies.

GEORGE W. MCGUIRE, *Chief.*

To the Board of Health of the State of New Jersey:

GENTLEMEN—I have the honor to submit herewith the annual report of the Division of Creameries and Dairies for the year ending October 31st, 1911.

Inspection of Dairies.

In our supervision of dairy conditions this year we have followed our usual custom of giving precedence in the matter of inspections to those local boards of health that have invited our assistance in the investigation of their milk supplies. In 1910, thirty municipalities applied for full reports of all their sources of supply, and our records this year show that 38 local boards have requested these investigations. The additional municipalities from which such requests have been received this year are: Cliffside, Glen Rock, Haddonfield, Madison, Moorestown, Point Pleasant, Ramsey, Raritan, Riverton, South Orange and Verona. The list of local boards of health which have taken special action in fixing a minimum sanitary standard for dairy premises has also increased during the year. The following municipalities have adopted ordinances, making it a necessary requirement for each dairy to receive a rating of at least 60 per cent. on the State score-card as a prerequisite to selling milk within their limits: Bordentown, Burlington, Collingswood, Dover, New Brunswick, Orange, Perth Amboy, Riverton, Salem and Trenton. Asbury Park, Metuchen and Paterson have passed resolutions requiring the same standard.

The number of dairy inspections made during the year was greater than that of last year by 396, the total being 1,874, as against 1,478 in 1910. The following table shows the result of the dairy inspections for both years:

YEAR.	Total number of inspections.	Number scoring above 80%.	Per cent. above 80%.	Number scoring below 60%.	Per cent. below 60%.
1910	1,478	714	48.3%	764	51.7%
1911	1,874	982	52.4%	892	47.6%

These figures show that there has been a great improvement in the sanitary conditions found on dairy premises, and that better methods are used in the handling of milk for public consumption. Not only is this improvement shown in the dairies which we have inspected a number of times, but the initial inspections of many dairies show that the general standard of sanitation among dairies in the State has perceptibly advanced from what it was a few years ago. This gradual improvement of standards is the natural outgrowth of the more stringent regulations of health boards.

This improvement is further shown by the number of veterinary certificates which have been received this year. On every inspection the owner of a dairy is left a blank form which he is requested to have filled out by his local veterinarian, and to return to this office. These reports show how many of the animals in the herd have passed a physical health inspection; how many were tuberculin-tested, and whether or not any of the cows were suffering from any udder or other disease. Last year only 91 of these reports were received properly filled out, and this year 254 reports have been received. These 254 reports represent the examination of 5,173 animals. Sixty-one herds were represented to have been tuberculin-tested. Several local boards of health are seriously considering the matter of requiring a certificate showing that all animals in the herd have passed the tuberculin-test before permitting the milk to be distributed within their jurisdictions.

We have been requested by several health boards to investigate the condition of dairies outside of this State where such milk represented a part of their supply. We undertook to comply with these requests as far as our means would allow. In this connection, two inspectors were sent to Chenango, Broome, Cortland, Tompkins and Sullivan counties in New York State, and to Susquehanna, Wayne and North Hampton counties in Pennsylvania. In all there were 181 of these dairies inspected and scored, and the local boards of Rutherford and South Orange, at whose request the inspections were made, insisted upon the same management in these dairies as in those of this State whose product entered into their supply. In order to comply with future requests of this character, it will be necessary for the local boards to defray at least a part of the expense. This has already been done by South Orange, and other boards have intimated that they will be willing to do so.

A number of local boards requested our officers to make an inspection of their local milk depots at the same time that the dairies were being inspected, in order that they might have a complete record of every condition of the supply. This work, we think, should be done by the boards in whose localities the milk is consumed. Every milk shop should be licensed by the local board of health within whose jurisdiction it is situated and should be required to be provided with every essential for the safety and clean keeping of the milk. There should also be proper equipment for cleansing all cans and other containers. We found, during the inspections of these milk shops, that some of them were located in close proximity to stables and other sources of contamination. The location and management of these places should be regulated by local ordinances. There were 62 milk depots investigated during the year, and the local boards of the municipalities within whose limits they were found were advised as to their condition and management.

The quantity of certified milk produced in this State is being increased, and while there are no new dairies of this character within the State, the output of those already reported is greater than last year. During the summer season there is so great a call for this grade of milk at the different seaside and other resorts that this year it was impossible for our local certified dairies to meet the demands, and several dealers drew their supply during

the summer from two dairies in New York State—the last two on the list given below. There are a number of high-grade dairies in New Jersey which produce milk showing a very low bacterial count and which, with but little change in their equipment, could meet the requirements of a medical milk commission. One of these has already asked for an inspection by officers of this division with that idea in view.

Following is a list of the dairies producing certified milk for sale in New Jersey:

Fairfield Dairy.....	Caldwell	Essex county.
Haddon Farms.....	Haddonfield	Camden county.
Noe Farm, Incorporated.....	Madison	Morris county.
Purity Milk Farm.....	Pennington	Mercer county.
Raritan Valley Farms.....	Raritan	Somerset county.
Walker-Gordon Milk Farms.....	Plainsboro	Middlesex county.
Swain Brothers.....	Kearny	Hudson county.
Riverside Farm.....	Owego	New York.
Quarry Farm.....	Elmira	New York.
Redgate Farm.....	Earlville	New York.
Brookside Farm.....	Newburgh	New York.

Following is a review of the work done in dairy inspection in connection with local boards of health:

ASBURY PARK.

The milk supply of Asbury Park is derived from many sources, including nearby dairies and creameries in New Jersey and New York. It is very difficult, with our available force of inspectors, to supervise the entire milk supply of this city in the summer season, when the supply is so constantly changing and increasing. We have kept a very good supervision over the permanent shippers and the dairies which are located in the vicinity of Asbury Park. About 1,300 quarts are received daily from one creamery located at Colts Neck, and the dairies supplying this creamery have been inspected, with the result that there has been a gradual improvement in the sanitary condition of each dairy since the beginning of the work in 1909. At the end of that year the general average of these dairies was 50.75 per cent., and at the last inspection in 1911 the general average of the twenty dairies supplying this milk was 60 per cent. The methods of handling the milk and the

sanitary conditions in the creamery itself have also been gradually improved since the beginning of our inspections.

Eleven of the local dairies fell below the required standard of the Asbury Park Board of Health, and the owners were requested to improve conditions so as to meet the board's approval. A reinspection showed that improvements had been made in several of them sufficient to increase the total award 19.75 points. We were informed by the local health officer that the milk of two dairies fell below the sanitary standard of the city and had been excluded.

BAY HEAD.

In July, 1911, a complaint was received by the Board from residents of this borough that the milk supply was of an inferior quality. Inspections were made of the six dairies furnishing the supply, and the following will show the result of the inspection of each dairy:

Name.	Score.
Geo. A. Gifford.....	36.75%
Luther Pullen.....	49.75%
Joseph La Fetra.....	50.00%
Morris Milk Co.....	58.00%
Julius Foster.....	60.00%
Isaac Van Hise.....	61.25%
Average score.....	52.50%

We endeavored to interest the local authorities of Bay Head in their milk supply, but received no assistance from them in cleaning up the dairies which fell below what is considered a safe figure. Part of the milk of four of these dairies is distributed in Point Pleasant, and copies of the scores were sent to the local health officer of that borough.

BORDENTOWN.

Since 1909 there have been four general inspections of all the dairies supplying Bordentown with milk. These have been supplemented by reinspections of all those dairies which fell below 60 per cent. on first inspection. The average score of all the

dairies in 1909 was 58 per cent. The average score of the dairies in 1911 was 62 per cent., showing a gradual improvement in the sanitary conditions under which the milk supply of this city is handled. The local board of health has spared no pains to assist our officer in the work of improving the supply, and the result attained shows a gradual but steady improvement.

BOUND BROOK.

We have been making inspections since 1909 of the dairies supplying Bound Brook with milk. The average score on the first inspection was 59 per cent., and the last 65 per cent. Much pride in the quality of their output is taken by the owners of a number of dairies supplying this municipality, and some of the product is of a very high standard.

BURLINGTON.

The number of dairies that supply the city of Burlington with milk has increased from 23 in 1909 to 31 in 1911. The average score of the 23 dairies on the first inspection was 55.50 per cent., and the last average score in 1911 was 60.75 per cent. The local board of health of Burlington has been very active in its efforts to improve the milk supply of the municipality, and that it has been rewarded in these efforts can be plainly seen by the records of this department, showing general improvement of all the dairies supplying that city.

COLLINGSWOOD.

The health department of Collingswood borough has taken a lively interest in the quality of the borough's milk supply since 1909. During the year the result of the inspection showed the average score to be 55.75 per cent., and all those dairies which fell below the requirement of 60 per cent. were notified that a re-inspection must show improvement in order to meet the demands of the local board of health. The medical inspector has requested a number of inspections since that time, and the last annual in-

spection shows an average score of 59 per cent. Part of the supply of this borough is derived from the creamery of the Harry R. Read Company of Camden, and in order to learn the condition of the milk supplied to that creamery it was necessary for us to inspect the dairies furnishing it. It was found that a number of dairies supplying milk to the creamery scored below 60 per cent. The board of health of Collingswood refused to accept the mixed milk of this creamery, and after considerable argument a plan was agreed to by the creamery manager and the board of health by which only the milk from dairies scoring above 60 per cent. is sent to Collingswood.

DOVER.

There is no locality in the State which has shown a greater interest in its local milk supply than the town of Dover, and this department has given the local authorities considerable aid in inspection work since September, 1910. The milk of this town is received from 21 local dairies, and from part of the supply of the creameries located at Andover, Flanders, Chester and Broadway. The average rating awarded the local dairies on the first inspection in 1910 was 56.75 per cent., and that of the dairies supplying the McLaughlin creamery at Flanders, 63 per cent.

The inspections for 1911 show the average rating for the local dairies to be 60.75 per cent., and that of the dairies supplying creameries from which part of the supply is derived, as follows: Andover creamery dairies, 71.50 per cent.; McLaughlin creamery dairies, Flanders, 58 per cent.; Willswood creamery dairies, Flanders, 63.75 per cent.; Chester creamery dairies, 58 per cent.; Broadway creamery dairies, 52.50 per cent. On the receipt of the score-cards of the dairies supplying these creameries with milk, the local board of health refused to receive milk from creameries whose dairies scored less than 60 per cent., and the milk from one creamery was excluded. A final arrangement, however, was made with the owner of the creamery, by which he agreed to furnish milk to Dover from only such dairies as scored 60 per cent. or above. This action of the local board stimulated the dairymen supplying this creamery whose ratings were below 60 per cent., and they immediately proceeded to improve the sani-

tary conditions of their premises and to better their methods of handling milk, afterwards asking for a reinspection of their premises.

GLEN ROCK.

A communication from the clerk of the board of health of Glen Rock, Bergen county, under date of April 19th, 1911, requested an inspection of all the dairies supplying this locality with milk. An inspection was made during the same month which showed that four of the local dairies had an average score of 60.50 per cent., and that the supply which came from the Andover dairies showed an average score of 71.50 per cent. The general average score of the supply was 71.25 per cent., although several dairies went below 60 per cent. Copies of all the scores were sent to the local authorities of Glen Rock, with a suggestion that they require each dairy to score at least 60 per cent. as a prerequisite to distributing milk within their jurisdiction.

HADDONFIELD.

On request for an inspection of the dairies supplying Haddonfield, 18 dairies were inspected. The general average score of the 18 dairies was 60.25 per cent.

HOPEWELL.

Inspections have been made for the borough of Hopewell since 1909. Thus far there have been three general inspections of the dairies and the usual reinspections. The average score on the first inspection in 1909 was 50 per cent., and the average score on the last inspection in 1911, 61.75 per cent. There has been a general improvement in the milk supply of this borough, due to the work of our division.

JAMESBURG.

A complaint received from a private citizen regarding the quality of the milk sold in Jamesburg was received by the Board and referred to this division. Communication was had with the local board of health, which resulted in a general inspection being made of all the dairies supplying that municipality with milk. The highest score recorded of any dairy was 64.25 per cent., and the lowest score, 43.50 per cent. The general average score was 54.50 per cent. Those dairies scoring below 60 per cent. were notified to improve their conditions. A reinspection has since been asked for by the local board but has not yet been made.

KEARNY.

At the request of the local board of health of Kearny, five dairies were inspected and showed an average score of 58.50 per cent. The local board of health was also furnished, for purposes of investigation, a list of the dairies supplying Andover and Flemington creameries, a part of whose supply is received in Kearny.

MADISON.

The milk supply of the borough of Madison was investigated in October. The 14 dairies from which the supply is drawn were inspected and found to be above the general average in quality. The highest rating of these 14 dairies was 96 per cent., and the lowest 43.25 per cent., only two being below 60 per cent.

METUCHEN.

The milk supply of Metuchen has been investigated annually since 1908, and a general improvement has been shown in the quality of the milk. The first inspection showed an average score of 63 per cent., and the last one, 72.25 per cent. Much credit

is due to the health officer of this municipality for the interest which he takes in the cleanliness of the milk furnished the citizens of Metuchen.

MILLBURN.

The general average of the scores of the dairies supplying Millburn township with milk was 72.25 per cent. this year as against 64.50 per cent. on the first inspection. There has been a yearly improvement in the sanitary conditions under which milk is produced and handled in this locality since the first inspection of these dairies.

MOORESTOWN.

The first inspection of the dairies supplying Moorestown was made during the present year. There is a superior quality of milk produced in this vicinity, and the rating of the dairies showed that sanitary precautions are well observed. The scores of the different dairies supplying this locality with milk are as follows: 81.25 per cent., 80.25 per cent., 80.25 per cent., 80 per cent., 69 per cent., 64.25 per cent., 55 per cent., 54.50 per cent. and 43.75 per cent. Average score, 67.50 per cent.

NEW BRUNSWICK.

A great deal of work in the way of milk inspection has been done for the city of New Brunswick during the last few years. A very active board of health in this city is constantly investigating dairy conditions. This division has devoted considerable time to the milk supply of this city, and has been very willing to do this work because of the active co-operation of the local board. During the year a pamphlet of 28 pages was issued by the New Brunswick board, and was freely distributed to all citizens of the town as well as to the dairymen. This pamphlet gave a complete description of the conditions under which milk is produced in every dairy supplying that city, and displayed cuts showing some very unsanitary conditions as well as those of a sanitary character. This has resulted in educational work that must im-

prove the general milk supply of the city. The board has also arranged for meetings among the dairymen in order that they can intelligently discuss the milk question. The average score of the first inspection of the dairies supplying this city with milk was 52.50 per cent., and of the last inspection was 63.25 per cent., exclusive of the milk supplied by a new creamery. The average score of the dairies supplying the new creamery was 51.50 per cent. This, of course, brought the general average down to 61 per cent. This showing for a city whose supply is drawn from 131 dairies is very good, especially when it is considered that new dairies are constantly being added to the list, which must be inspected a number of times before they can be approved.

ORANGE.

The city of Orange began to take a lively interest in its milk supply in 1908, from which time we have made periodical inspections of the dairies which supply the creameries shipping milk to this city. There are about 50 local dairies whose milk is consumed in the city of Orange, and the work of inspecting these dairies has heretofore been done by the local health officer. We have no record as yet of the sanitary conditions of these dairies, but have received a request from the local board to include them in our inspection work in the future, and the work is now being performed, the result of which will be shown in our next report. The following table shows the dairies inspected by this division, and the general average awarded the dairies supplying each creamery:

8 individual shippers.....	Average score,	59.75%
31 Lafayette creamery dairies.....	" "	64.75%
33 Hope creamery dairies.....	" "	62.75%
18 Chester creamery dairies.....	" "	58.00%
30 Roseland creamery dairies.....	" "	60.25%
28 Andover creamery dairies.....	" "	68.00%
35 Gracie, N. Y., creamery dairies.....	" "	60.75%
Brisbin, N. Y., creamery dairies.....	" "	74.50%
Total, 236 dairies.	General average score,	65.25%

The health officer of Orange is very active in the work of milk inspection, and has notified every shipper of milk to that municipality that he will be expected to handle his milk in a way satisfactory to the city board and the State Board, if he desires to continue shipping milk to that city. The following circular-letter has been prepared by Mr. Mac Nutt, the local health officer, and sent to every shipper whose dairy falls below the required sanitary standard:

DEAR SIR—Your attention is drawn to the ordinance recently passed by this board forbidding the sale of milk in this city from dairy premises scoring lower than 60 on the State score-card.

Inspections of your dairy by an officer of the State Board of Health has resulted in a score of . . . % being allowed.

You are therefore notified to at once make improvements such as will raise your score above the legal standard and place the premises in accordance with the requirements of this board. To this end you are advised to follow the recommendations which have been forwarded to you by the Division of Creameries and Dairies of the State Board of Health.

After a reasonable length of time a reinspection will be made and your premises re-scored. Any further information regarding the score-card or the methods of milk production approved by this board will be cheerfully furnished on application.

Respectfully yours,

Health Officer.

PATERSON.

The board of health of this city did some excellent work in co-operating with this Board during 1910 and 1911, and is now in a position to continue the work with its own inspector, having been furnished a record of every dairy supplying the city with milk. This year we have made and reported to the local board the result of inspections of 82 dairies.

PERTH AMBOY.

Considerable correspondence has taken place between this division and the local board of health of Perth Amboy relative to the quality of the milk shipped to that city. The local board of health passed an ordinance forbidding the sale of milk from dairy premises scoring less than 60 per cent. on the State score-card. One hundred and eighty-nine dairies were inspected by us as a

result of the city's request for an investigation. The supply of this city is obtained from many sources, and considerable time was consumed in investigating them. Copies of the score-cards of each dairy were sent to Perth Amboy, and those dairies which were still below the standard, after several reinspections, were excluded. The milk supply from two creameries was excluded for a time because many of the dairies which entered into the supply of these creameries fell below the required standard, and since the milk of all the dairies was mixed, the city of Perth Amboy refused to accept it. An arrangement was subsequently made, however, by which only such milk was shipped as came from dairies which showed a rating of 60 per cent. or above. The following table will show the creameries from which the supply is obtained, and the general average score:

20 local dairies.....	Average score, 60.75%
3 individual shippers.....	" " 64.25%
7 Stanton creamery dairies.....	" " 62.00%
52 Three Bridges creamery dairies.....	" " 59.75%
35 Clinton creamery dairies.....	" " 61.50%
39 Jutland creamery dairies.....	" " 56.50%
33 Flemington creamery dairies.....	" " 59.00%

189

General average score, 59.50%

POINT PLEASANT.

For a number of years complaint has been made of the quality of milk received at Point Pleasant, and this year the secretary of this Board received a letter from the secretary of the board of health of Point Pleasant, requesting an inspection of all the dairies supplying the borough with milk. In response thereto 20 dairies were inspected, which showed an average score of only 50.75 per cent. The highest score awarded any dairy was 60.25 per cent., and the lowest, 43.75 per cent. This did not include the dairies of the Walker-Gordon Company nor of the Slawson-Decker Company, as the milk from these dairies arrives at Point Pleasant in bottles and is generally well iced and cared for. The greatest trouble with this supply is the temperature at which it is held. Most of it is carried in wagons without protection, and when it arrives at Point Pleasant it is in the most susceptible condition for the development of bacteria. The local board of health was

notified of the conditions found and was urged to keep a stricter surveillance over the dealers and to insist upon better methods in handling and distributing milk.

PRINCETON.

Thirty-one dairies have supplied milk to the borough of Princeton during the past year. They were inspected by our division and the average score was 62.75 per cent. The local board of health of Princeton is preparing to do valuable work in milk inspection during the coming year, and it is expected that a much better condition will be shown at the end of 1912.

RAHWAY.

The second annual inspection of the dairies supplying Rahway shows an average score of 65 per cent. as against 64.75 per cent. last year. With two exceptions, each of these ten dairies scored above 60 per cent. The two exceptions were 56.50 per cent. and 38 per cent. The dairyman whose premises scored but 38 per cent. was given a limited time in which to bring his dairy up to the requirements of the local board of health, and if he fails to do so his milk will be excluded from sale.

RAMSEY.

The local board of health of Ramsey made its first request for an inspection of dairies this year. Nine dairies were scored and the average score was only 52.25 per cent. Those dairies falling below the local board's requirement of 60 per cent. were written to and informed that it would be necessary for them to improve conditions on their premises in order to continue the sale of milk within the jurisdiction of the Ramsey board of health.

RARITAN.

Five of the local dairies supplying Raritan with milk were scored and a rating of 54.25 per cent. was given on an average score.

RIVERTON.

The borough of Riverton has taken considerable interest in its milk supply during the past year, and has passed an ordinance requiring that all dairies shall receive a rating of at least 60 per cent. as a prerequisite to selling milk within the borough. The 13 dairies had an average score of 58.50 per cent., and the local board of health informs us that it will insist upon improvements in those dairies falling below 60 per cent., sufficient to meet this requirement.

ROSELLE.

The borough of Roselle is very particular about the quality of milk furnished its citizens, and an active board of health has been thoroughly supervising the milk supply since 1909. This board will not permit the sale of any milk within the limits of the municipality until the premises on which the milk is produced and handled have been inspected by officers of this division and approved by them. During the past year 36 dairies supplying this borough with milk were inspected, and the general average score was 66 per cent.

RUTHERFORD.

The board of health of Rutherford requested an inspection of dairies, including part of the supply of three creameries, two of which are located in New York State and one is in Pennsylvania. In all, 85 dairies were inspected, the average score being 59.25 per cent. The average score of the three local dairies alone was 67 per cent.

SALEM.

There were two inspections made during the year of dairies supplying Salem with milk. The result of the first inspection was a general average score of 57.25 per cent., and of the second inspection, 60.25 per cent. The Salem board of health requires that all dairies supplying the city with milk shall receive a score of at least 60 per cent.

SOUTH ORANGE.

South Orange village requires that all dairies supplying the municipality shall first be inspected by officers of this division, and we are in close touch with the entire supply. Part of the milk reaching South Orange is produced in New York State, and at the request of the local board, an officer of this division was sent to the two New York State creameries and inspected the 88 dairies entering into their supply. The following table will show the general average score of the sources from which the milk is derived:

12 local dairies and individual shippers.....	Average score.	68.00%
30 dairies supplying Roseland creamery.....	" "	60.25%
28 " " Andover creamery.....	" "	68.00%
51 " " Hope creamery.....	" "	52.50%
32 " " Augusta creamery.....	" "	71.50%
53 " " Brisbin, N. Y., creamery.....	" "	74.50%
35 " " Gracie, N. Y., creamery.....	" "	60.75%

General average score. 63.25%

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SOUTH ORANGE TOWNSHIP.

There have been three general inspections of the South Orange township milk supply since September, 1910, and a decided improvement has been made since the first inspection. The general average on the first inspection was 50.50 per cent., and on the last inspection, 62.25 per cent.

SUMMIT.

This Board has been assisting the city of Summit in the investigation of its milk supply since 1909, and annual inspections have been made. The first inspection showed a general average score of 62 per cent., and the inspection of 1911 showed 64.25 per cent. Considerable interest is manifested by the health board of this city in the milk supply, and it has actively co-operated with this Board and rendered valuable service in these investigations. The supply of Summit is derived from 19 local dairies, and from part of the product of 46 dairies delivered at the Andover and Chester creameries.

VERONA.

The ten dairies supplying Verona with milk were inspected in May, 1911, and the average score was found to be 70 per cent. The milk produced at these dairies is of superior quality, only three of them falling below 60 per cent. The highest score recorded is 86 per cent., and the lowest 55.50 per cent.

WESTWOOD.

Two annual inspections have been made of the milk supply of Westwood. The general average of the six dairies contributing to this supply was found to be the same in each year, viz., 62.75 per cent.

WOODBIDGE.

The board of health of Woodbridge township, Middlesex county, has taken a lively interest in the milk supply, and for two years regular inspections have been made. All dairies falling below 60 per cent. are given a limited time in which to bring up their rating, and the result is that the dairies have shown a marked improvement, advancing from 52.50 per cent. to 60.25 per cent. in their general average this year.

MISCELLANEOUS.

Jersey City. We are seldom called upon to investigate the milk supply of Jersey City, and only when an individual consumer suspects his milk supply to be of a very inferior quality do we receive some notification of it. Seven dairies were complained of and inspected, and the local board of health was notified of the conditions found.

Newark. The records showing the condition of 46 dairies were sent to the health board of Newark with comments on those which we considered inferior. Toward the close of the year numerous complaints were received of the unsanitary condition of a number of dairies contributing to this supply, and inspections are now being made of these places.

Lawrenceville School. The dairies supplying the Lawrenceville School have been regularly inspected since 1908. The general average of all these dairies for this year was 66.75 per cent.

Glen Gardner Tuberculosis Sanitorium. The milk supply of this institution has been investigated a number of times, and after each inspection the trustees of the institution have been notified that the quality of the milk was not satisfactory to this Board. The officers of the institution have endeavored to secure a better supply, but their efforts in this direction have failed. An arrangement was made with the manager of the Hampton creamery to set apart for use by this institution the milk from the best dairies contributing to his supply. In accordance with this arrangement, the milk of eight dairies was sent daily to the Sanitorium. An inspection of these eight dairies was made by an officer of this division in October, 1911, and the general average score was 58.75 per cent. These figures indicate that the milk is not produced and handled as it should be for use in an institution for the cure of tuberculosis, which, above all other curative institutions, should have a clean, fresh and proper supply of milk, as this is the chief diet of the patients under treatment there.

TABLE SHOWING THE TOTAL NUMBER OF DAIRIES INSPECTED IN EACH COUNTY. THE NUMBER SCORING ABOVE AND BELOW 60%.

COUNTY.	Total number of dairy inspections.	Number scoring above 60% of the perfect mark.	Number scoring below 60% of the perfect mark.
Bergen	44	14	30
Burlington	103	55	48
Camden	33	16	17
Essex	63	41	22
Gloucester	7	2	5
Hudson	12	2	10
Hunterdon	219	92	127
Mercer	39	22	17
Middlesex	134	67	67
Monmouth	105	38	67
Morris	194	99	95
Ocean	13	3	10
Passaic	103	53	50
Salem	41	16	25
Somerset	221	137	84
Sussex	169	142	27
Union	36	27	9
Warren	157	45	112
Broome, New York.....	20	9	11
Chenango, New York.....	53	33	20
Cortland, New York.....	32	19	13
Sullivan, New York.....	6	3	3
Tompkins, New York.....	5	1	4
Northampton, Penn.....	9	1	8
Susquehanna, Penn.....	17	7	10
Wayne, Penn.....	39	18	21
Total	1,874	982	892

TABLE SHOWING THE AVERAGE SCORE OF DAIRIES SUPPLYING THE FOLLOWING CREAMERIES.

LOCATION OF CREAMERY.	1900.		1910.		1911.	
	Number of dairies.	Average score.	Number of dairies.	Average score.	Number of dairies.	Average score.
Allentown	13	54.75	11	54.25		
Andover	31 (Nov.)	62.50	24	68.50	30 (Nov.)	71.50
Andover	30 (July)	68.50			28 (Sep.)	68.00
Angusta			36	73.00	32	71.50
Bevans	35	63.50				
Bridgeville					17	58.25
Brisbin, N. Y.					53	74.50
Broadway					33	52.50
Camden (Garden State Dairy)	40	56.00				
Camden (Harry R. Read Co.)	6	59.75	14	57.25	6	64.00
Chester	19	54.00	20	60.50	20 (Nov.)	57.00
Chester					18 (July)	58.00
Clinton					35	61.50
Colts Neck	15	50.75	14 (May)	53.50	20	60.00
Colts Neck			13 (June)	62.75		
Columbus	39	59.00				
Flanders (W. J. McLaughlin)			16	63.00	14	58.00
Flanders (Williswood Dairy)					13	63.75
Flemington	29	53.75	24	58.25	33	59.00
Franklin Park					16	51.50
Gracie, N. Y.					35	60.75
Hampton	46	58.25				
Hickory Grove, Pa.					22	59.75
Hixon					39	51.00
Hope					33 (Feb.)	62.75
Hope					51 (Oct.)	52.50
Jutland	26	55.75	28	57.25	39	56.50
Kirkwood, N. Y.					15	58.00
Lafayette	30	64.75	29	75.50	18 (Nov.)	73.50
Lafayette					31 (Oct.)	64.75
Monroe	14	67.00	14	66.50	13	61.00
Pemberton	34	55.00				
Roseland					27 (Feb.)	58.50
Roseland					30 (Sep.)	60.25
Skinnners Falls, N. Y.					45	59.00
Stanton					7	62.00
Three Bridges					52	59.75
Wrightstown			52	55.75		

MISCELLANEOUS COMPLAINTS.

COMPLAINANT.	DATE OF INVESTIGATION.	NATURE OF COMPLAINT.	ACTION TAKEN.
Trenton Board of Health.....	Nov. 2, 1910.....	Milk alleged to be abnormal when delivered.	Unsanitary condition found on premises and milk handed in an improper way. Time limit given for improvement. Owner finally relinquished business.
New Brunswick Board of Health	Nov. 7, 1910.....	Milk handled by inmate diseased suspects on township poor farm.	Inspection of premises made; matter referred to Division of Medical and Sanitary Inspection.
Seventh Ward Improvement Association, Jersey City.....	Nov. 16, 1910.....	Unsanitary condition of five dairies.	Inspections made and Jersey City board of health requested to revoke licenses granted to dairy-men.
Resident of Kingwood Twp., Hunterdon Co.	Nov. 18, 1910.....	Unsanitary condition of dairy.	Owner ordered to improve conditions.
Board of Managers, Union Industrial Home, Trenton....	Jan. 18, 1911.....	Quality of milk complained of.	Investigation made of the supply and instructions given to dairymen and to the managers of the institution to take better care of the milk, regarding keeping it at a low temperature and obtaining a fresher supply.
Resident of Salem.....	Mar. 17, 1911.....	Diseased hogs on dairy premises.	Instructions given for the separation of hogs and cows. Premises disinfected.
Mayor of Spring Lake.....	April 28, 1911.....	Unsanitary dairy.	Inspection made and matter referred to local board.

this matter by the fact that we were notified of a number of cases of ptomaine poisoning which had occurred in people who had eaten ice cream manufactured by one particular dealer. After inspection of the premises, sufficient evidence was obtained to warrant a revocation of the owner's license. Manufacturing was suspended for several days until a general cleaning up of the establishment had been made, and better methods installed for the handling of the materials and the finished product there manufactured. When all this was done the owner's license was restored, but a few days after he had received his license, another case of sickness, similar to the ones before mentioned, occurred in a person who had eaten ice cream in his establishment. Upon notification we at once made a searching investigation and found that cream had been received from a dealer in a transportation can which was corroded on the inside to such an extent that it was immediately condemned by the inspector, as it was believed that the milk and cream contained in rusty cans were as much responsible for the trouble as any other suspicious cause. This matter was referred to the Board, and they made the following ruling to be added to the code of rules for the government of creameries:

Whenever an inspector shall find any transportation can in the possession of a milk dealer or ice cream manufacturer, which, in his judgment, is corroded on the inside to such an extent as to be liable to impair the purity or wholesomeness of milk or cream, it shall be his duty to fasten upon the can a tag containing the words "Condemned and not to be used for milk or its products, by order of the Board of Health of the State of New Jersey."

It is the intention of the Board during the coming year to have the inspectors particularly scrutinize all cans and utensils used in the handling of milk or its products, and those which are found to be in such a corroded condition as to be liable to impair the contents will be immediately condemned, and the owners notified that the continued use of such containers will result in the revocation of the licenses granted them.

At the end of the year 1910 there were 22 creameries operating in the State, for which no licenses had been recommended. The reasons for permitting these creameries to operate without licenses were printed in last year's report. During this year nine of those creameries, having met with the requirements, have been licensed, as the following list shows:

ATLANTIC CITY. (Abbott's Alderney Dairy Co.) A reinspection showed that the family which had occupied part of the building had vacated the same, and that the building is now used for creamery purposes only. Licensed November 15th, 1910.

BELLE MEAD. (Farmers' Exchange Co.) The Board having refused to license this creamery on account of its dilapidated condition and its inadequate capacity for caring for the large quantity of milk handled there, the company has since built a large brick structure and equipped it with modern facilities for condensing and otherwise handling market milk. They were licensed on October 10th, 1911.

DAVIS STATION. (Wills-Jones Dairy Co.) This is a new creamery, having been recently built and was licensed on May 23d, 1911.

ELMER. (Isaac B. Reeve.) A new cement floor having been placed in this creamery, covers provided for the milk vats, and a general improvement made in the management of the creamery, the Board issued a license to the owner on December 13th, 1910.

FRANKLIN PARK. (Samuel Adler.) A license was refused this creamery last year on account of the poor equipment and lax methods, but after the building was reconstructed, with a cement floor, better equipment and improved methods, the Board issued a license to the owner on November 15th, 1910. This creamery was originally established for the manufacture of cheese, but since the improvements have been made, the owner has been selling large quantities of cream to dealers. A number of reinspections were made during the year, and for a time little criticism was made, but later laxity was shown in handling the product and the owner has again been notified that unless greater care is exercised in the handling of the milk entrusted to his care, the Board will be asked to revoke the license already granted.

GREAT NOTCH. (J. G. Sprattler.) A license was refused the owner of this creamery, because the building did not conform to the requirements of the law. He built a new structure at Richfield, which was approved by the Board, and a license was issued to him on May 15th, 1911.

NEWARK. (H. Allen Osborne.) The owner of this creamery conducted it in a very slovenly manner for the first few months of his ownership, and was cited to appear before the Board; since

which time much improvement has taken place in the establishment. He was accordingly licensed January 3d, 1911.

NEWARK. (Wm. Provost.) A new modern creamery was built by the owner of this establishment, which was incomplete at the close of the last fiscal year. He has now a model creamery, and he was licensed February 28th, 1911.

TRENTON. (Alpha Buttermilk Dairy.) A license was refused in this case because part of the building was used as a dwelling. This is a city milk depot where a specialty is made of manufacturing butter and buttermilk. An amendment to the law approved May 28th, 1911, permitted the occupation of this class of creameries in buildings occupied by families, provided the conditions met with the approval of the State Board of Health. A license was issued on April 4th, 1911.

The following list will show the conditions in the 20 creameries which at the end of this year are still unlicensed. Five of these creameries are entirely new establishments, not having yet met with the requirements of the Board, and two have new owners and are not yet ready for a license.

ATLANTIC CITY. (Edward F. Price.) This is a milk depot where milk is handled for the Atlantic City trade. During our several inspections the methods could not be approved by this Board, and while there has been an improvement, we have not yet felt warranted in recommending a license.

ATLANTIC CITY. (Caleb E. Shreve.) The methods in this establishment are fair, and a separate building has been established for the milk business, apart from the family dwelling. The stable, however, is very close to the milk room, and the owner has been notified that this stable must be removed.

ATLANTIC CITY. (Samuel Wells.) The location of this establishment does not meet with our approval, and the owner has been so notified. He has made a strong effort to improve the conditions, but the location and the surroundings are unfit for conducting the milk business. We therefore have not recommended a license for this establishment.

ATLANTIC CITY. (Thomas K. Wilson.) This is a large milk depot where milk is pasteurized, separated and bottled for the Atlantic City trade. The owner's stable was located alongside the creamery, and under the same roof, but he has since built a large modern stable at a great distance from the creamery, and will

make other improvements during the fall. He has been informed that no license can be issued to him until the improvements are completed.

BAPTISTOWN. (Geo. H. Scott.) This creamery has not been licensed, although much money has been spent by the owner in improvements, but as yet it does not meet with the Board's approval.

BEVANS. (Seiler Brothers.) A number of inspections of this creamery have been made, but the conditions have not been satisfactory to this Board. It may be stated, however, that the owners, when requested to make special improvements, have complied with the requests, and that at times the management has been satisfactory. At other times, however, lax methods have prevailed, and we have not felt warranted in recommending a license for this creamery until we are satisfied that more satisfactory methods will be maintained.

CALIFON. (Samuel Tiger.) This creamery has remained unlicensed because it is simply a depository for a few cans of milk brought in by farmers, there being no manipulation of the same, nor any washing of cans or utensils on the premises.

CHESTER. (Seiler Brothers.) This creamery is fairly well conducted, but some difficulty has been encountered with the drainage. The owners of the creamery have written us recently that under the new management they expect to rectify the trouble complained of.

HOPE. (H. R. Hurley.) Several communications have been sent to the owner of this creamery, informing him that his methods are not satisfactory to this Board, and some improvement has been made, but not sufficient to warrant us in recommending a license.

IRVINGTON. (Samuel Lemmerman.) Many inspections have been made of these premises, and building has been going on during the year. The conditions so far have not warranted the recommendation of a license.

JERSEY CITY. (Greenfield Dairy Co.) The license issued to this firm for the operation of a creamery at 96 Harrison street, Jersey City, was revoked because they changed their location, and established themselves in a building at 135 Fairmount avenue, Jersey City. The new plant, with one or two exceptions, complies

with the Board's requirements, but another inspection will be necessary before we will be warranted in recommending a license.

MIDDLEBUSH. (Cornelius I. Van Cleef.) This dealer has been selling milk at wholesale in the city of New Brunswick for some time, and objection was made by other creamerymen that he was violating the creamery act, in that he was receiving his milk from many producers who delivered it to him on the roadside, after which he divided it among his customers in New Brunswick. His methods were investigated by our officers, and he was finally informed that unless he established some place for the handling of this milk and the proper washing of his cans and utensils, he would be proceeded against for a violation of chapter 139 of the laws of 1906. The latest report of the inspector on these premises shows that a building is now in course of erection to be used by this dealer as a creamery.

MONTAGUE. (Seiler Brothers.) We have still refused to recommend a license for this creamery on account of bad methods and non-compliance with the law. Many promises have been made by the owner to improve conditions, but they have failed to be satisfactory to this division.

NEWARK. (John Rohdick.) This dealer purchased the business of August Beckmeyer, who operated a licensed creamery at 65 Clinton place, Newark, which license was revoked after the sale. The new creamery of Rohdick has not met with the requirements of the law either in point of construction or equipment.

NEW EGYPT. (Leo G. Balzereit.) This is an entirely new creamery, not yet finished, to be operated by a dealer from Philadelphia.

NORTH HALEDON. (David H. Peth.) This is a city milk depot, but the business carried on constitutes a creamery under the act. The operator handles about 17 cans of milk daily, which he sells to small dealers and at retail. It was found that his facilities were inadequate for the proper handling of the product, and he was informed that he must apply for a creamery license. The equipment, however, is not satisfactory, and no license can be granted until further investigation shows that proper equipment has been installed for the handling of the milk.

PLUCKEMIN. (James Woods.) The owner of this creamery was required to abandon the premises for the handling of milk be-

cause he had failed to comply with the Board's requirements, and on November 15th, 1910, the business was closed.

RARITAN. (Du Bois Brothers.) This creamery was formerly operated by Wm. Arkenburg, but it was abandoned and the license revoked. Subsequently, Du Bois Brothers, of Jersey City, acquired the property, and have applied for a license for its operation. Our inspection, however, showed that the creamery is not now in a condition to be licensed, and the owners have been so notified.

TROY HILLS. (Harry Backus.) This is a small creamery, practically a depository for milk brought by farmers and left in a spring house, being later taken to a creamery at Caldwell, which creamery is licensed. Milk is in no way handled, and no utensils nor empty cans are washed there, such work being done at the Caldwell creamery. We have not felt that this place should be classified as a creamery.

WAYNE TOWNSHIP. (Morris Felley.) This is a small creamery handling about 800 quarts of milk daily for sale to retail dealers in Paterson. Several inspections have been made of the premises. Some equipment has been installed for the washing of cans and utensils, and cement floors have been placed in the building, but the methods have not been entirely satisfactory, and other inspections will be necessary before we shall feel warranted in recommending a license.

Table Showing Creameries in Which Marked Improvements Have Been Made During the Year.

LOCATION.	OPERATOR.	IMPROVEMENTS NOTED.
Atlantic City	Albort's Alderney Dairy Co.	Creamery rooms formerly occupied by family vacated.
Atlantic City	Edward F. Price.	New cement floor; part of ceiling with smooth boards.
Atlantic City	Edward F. Price.	New addition to creamery, with bottling room.
Atlantic City	Samuel Wilks.	Accumulation of rubbish in adjoining alley removed; cement floor re-laid; promisses of several more improvements.
Atlantic City	Wilson Dairy Co.	New stable has been built and horses will be removed from present creamery site.
Helle Mead	Farmers' Exchange Co.	Old creamery abandoned; new modern brick structure for handling milk; new new condensing vats; screens provided for all openings.
Bronckway	Geo. L. Savidge.	Employees provided with lockers and other clothing.
Camden	Greenwich State Dairies Co.	Removal of horses from building in rear of creamery to a new building entirely separate from the creamery.
Camden	Harry A. Reed Co.	Old frame creamery burned, and a new brick structure with modern equipment, building and equipment.
Colmbus	Supplies' Alderney Dairy Co.	New cement floors.
Davie	Will-Jones Milk Co.	New cover for receiving vat.
Delaware	W. J. Hansen.	Constructed a special room for washing cans and utensils separate and new building for receiving vat.
Frenchtown	Harrison Milk Co.	New building for milk room.
Hackettstown	Alex. Campbell Milk Co.	New mechanical refrigeration; new wash boxes.
Halden	Hemen Titch.	New building and equipment.
Hamburg	W. J. Hansen.	New building and equipment.
Hampton	Plainfield Milk Co.	New receiving room and pasteurizing room.
Hixson	C. Van Herward.	New building.
Irvington	S. Lohmerman.	Interior surfaces partly sheeted with smooth boards and painted.
Jersey City	G. Silberman.	Interior surfaces partly sheeted with smooth boards and painted.
Lebanon	Geo. Clark & Son.	New cement floor in new addition.
Middlebush	C. I. Van Cleef.	New cement floor in course of erection.
New Brighton	Im Hois Brothers.	New modern creamery building and equipment.
New Egypt	Geo. J. Ross.	New building and equipment.
New Hope	Geo. J. Ross.	New building and equipment.
North Haledon	L. H. Beth.	New hot water and steam for water and steam facilities.
Patereson	J. J. Howers.	New hot water and steam for water and steam facilities.
Patereson	Ornathus Doeren.	Steam plant installed for washing purposes; ceiling sheeted.
Patereson	George Markle.	New washing facilities and steam.
Patereson	Alex. McCoid.	New creamery building, washing cans and utensils; cement floor.
Patereson	Abbott's Alderney Dairy Co.	New building; the well cleaned and top protected from surface drainage.
Ritchied	J. G. Sprattler.	

Table Showing Creameries in Which Marked Improvements Have Been Made During the Year.—Continued.

LOCATION.	OPERATOR.	IMPROVEMENTS NOTED.
Salem	Bridgton Condensed Milk Co.	Interior of receiving room lime-washed; new sanitary pipe for transferring milk.
Sherptown	Wm. Richman.	Upper room, lavatory removed; brick addition to building containing bath room, lavatory and closet for employes; new covers for receiving vats.
Sparks	George Inhaken.	New bottling machine and can washer.
Stockholm	George Inhaken.	Room partitioned off for wash room; interior surfaces painted.
Sussex	Beakes Dairy Co.	New milk receiving building constructed in place of the very old one destroyed by fire.
Sussex	Dennis Heardon.	New creamery building constructed in place of the very old one destroyed by fire.
Swartswood	Cedar Dairy Co.	New floor; interior surfaces painted; screens provided; new cold storage room; better drainage disposal.
Three Bridges	Amwell Valley Dairy Co.	Building enlarged; new wash room; new sanitary pump; metal interior surfaces painted.
Trenton	Snyder Pasteurized Milk Co.	New creamery building and equipment.
Warren Township	N. Wrede.	New covers for milk vats.
White House	Morris Feilly.	New building and equipment.
Woodstown	Supplies' Alderney Dairy Co.	New concrete floor; new vat covers; better drainage system; general cleaning; new disposal system; covers for vats and cooler; several improved methods in handling milk.

During the year we were requested by the local boards of health of Rutherford and South Orange to furnish them with records of the conditions existing on every dairy premises whose product enters into that sold within their respective jurisdictions. We found it necessary, in order to make a complete report, to visit several New York and Pennsylvania creameries, and also to inspect and score each dairy supplying these creameries. Our records show that 181 dairies supplied the five creameries visited. A report and score was made of each creamery, the same as is made of the creameries within our own State. It was necessary to notify the owners in three of them that their buildings and equipment did not meet with the requirements of the New Jersey law. As an example, the following recommendations made by the inspector who visited the Skinners Falls, N. Y., creamery, will show the conditions in that creamery.

The inspector recommends:

1. That the second floor of the bottling room be replaced by a suspended cement floor. At present, it is worn and leaks in several places, the leakage being plainly visible on the first floor. This leakage is very apt to fall into the cheese vat, and it is the practice of the attendants to move the cheese vat to different parts of the room in order to avoid the leakage from the second floor falling into the cheese.
2. That some suitable cover be placed on the receiving vat. In summer there is no protection against flies entering this vat.
3. That pipes of short lengths and proper connections take the place of the present twelve-foot iron pipe which connects the receiving vat with the milk heater. This pipe is taken down only once a week for cleaning.
4. That the boiler and coal room be separated from the room where the milk is skimmed and cheese is made. There is a pile of soft coal twenty feet from the separator, and the firing of the boilers is done while the work of separating is being performed.
5. That the interior of the first floor be painted.
6. That the cooling pools be emptied oftener than once a week.
7. That a trap be connected with the four inch sewer inlet and that a strainer be placed over the same. The drainage is discharged about forty feet from the end of the building, and finally enters the Delaware river.

The local board of health of Rutherford was notified of the conditions found in this creamery, and insisted upon improvements being made by the owners as a prerequisite to their shipping milk for distribution in Rutherford. No conditions similar to those reported of this creamery exist among the creameries operating in this State, and no creamery could be licensed until such conditions had been remedied.

The following are the names of the creameries outside of our State referred to above:

<i>Location.</i>	<i>Operator.</i>
Brisben, N. Y.....	Borden's Condensed Milk Company.
Gracie, N. Y.....	Baldwin-Lester Corporation..
Hickory Grove, Pa.....	June Dairy Company.
Kirkwood, N. Y.....	June Dairy Company.
Skinners Falls, N. Y.....	Fulboam Dairy Company.

The information gained in the inspection of the above creameries confirms our opinion that the creameries of our State are conducted on better sanitary lines than those of adjoining States, and we believe are equal to any in the United States. We therefore feel that the purpose of this Board to place New Jersey creameries in the highest class for sanitary management has been largely achieved.

Inspection of Ice Cream Factories

An amendment to the law known as the creamery act (P. L. 1906, ch. 139) was passed by the Legislature at its last session, giving the law definite application to ice cream factories. The original act made it the duty of the State Board of Health to inspect establishments in which milk or its products were manufactured into "food for human beings," and while it mentioned a number of such foods, it did not specifically designate ice cream. This caused some embarrassment, because several of the creameries which handled milk and cream for market purposes had installed ice cream machinery, and for part of the year devoted their energies exclusively to this branch of the business, dropping the sale of raw milk and cream. The question of whether a license was required for the conduct of such places then arose, and was only definitely settled by the amendment referred to.

Additional legislation took place during the session on the subject of ice cream factory inspection, and may be found in "An act to amend an act regulating the age, employment, safety, health and working hours of persons employed in factories, approved May 1, 1911." The third section of this act provides that no ice cream shall, after the passage of the act, be manufactured in any cellar, basement or place unless after inspection of such premises by the agents of the Board of Health of the State of New Jersey, a license shall be granted by the said Board to the owner, etc.

The additional work which the enforcement of these amended acts has involved has taxed to the utmost our ability to inspect and pass upon the sanitary condition of each place, so as to be able to recommend to the Board the licensing of only such places as are reasonably free from conditions which might render the food manufactured dangerous to health.

Investigation into the manufacture of ice cream may be divided into the following four classes:

1. Character of ingredients.
2. Sanitary precautions in the process of manufacture.
3. Methods of handling and storing.
4. Construction and equipment of factories.

During the year 115 samples of ice cream or its ingredients have been collected and delivered to the Laboratory of Hygiene for analysis. These consisted of raw materials and the finished product. So far as our investigations show, the only articles which enter into the manufacture of ice cream in this State are milk, cream, condensed milk, gelatine, sugar, eggs, "egg powder," "ice cream powder," fresh and canned fruits, chocolate, cocoa, flavoring extracts and coloring agents.

A pure and wholesome milk and cream supply is a most important consideration in ice cream manufacture, and the most satisfactory way of preventing the contamination of these principal ingredients is that adopted by this Board, of exercising close sanitary supervision of dairy farms. In our investigations into ice cream manufacture, we are careful to inquire into the source of the milk and cream supply and the methods used by the operator in handling and caring for it while in his possession. Our office records show the sanitary condition of about fifteen hundred dairy farms, and nearly two thousand inspections of them during the year. These data enable us to judge the quality of the milk handled and to trace any trouble which may occur by the use of such milk. Other ingredients are used as fillers and binders, coloring agents and flavoring extracts, and it is our intention to continue the collection of samples of these substances for analysis during the coming year.

The manufacture of wholesome and sanitary ice cream, whether or not the ingredients used include gelatine, condensed milk, etc., is a problem which is not at all considered by most manufacturers: their main object seems to be to prepare a salable article without especial regard to its wholesomeness, and in many establishments little thought is given to the careful handling of the materials in the process of manufacture. It should always be remembered that ice cream is eaten in an uncooked state, and that it is very susceptible to contamination through careless handling.

To illustrate the methods used in the factories in this State in handling ice cream during the process of manufacture, a table has been prepared and appears elsewhere in this report. The sum-

many of this table shows that out of 415 factories visited, the number in which good methods were reported was 40; those reported fair, 216; poor, 155, and bad, 4. Thus it will be seen that perfectly satisfactory methods were found in only 40 establishments, or about 10 per cent. of the 415 factories inspected. Credit has been given under "Methods" only where proper facilities are installed for cleansing vessels and utensils, and where the raw materials and finished products are handled and stored in a manner to preclude any possibility of contamination. Several of the factories included in the group of 216 which we have designated as "fair" can easily raise their standard to the first class by installing better, though inexpensive, equipment and by the exercise of a little more care in the handling of the edible materials under their charge. The 155 factories which we have classified as "poor" under the heading of "Methods" were found, on first inspection, to be handling the product in an unsanitary way, but many of them, on being notified, made changes in their practices which placed them in a better light on reinspection. This is shown in the table referred to under the heading of "Improvements."

The following manufacturers were notified by the Board to cease the manufacture of ice cream in their present establishments because the places were unfit to handle and store any food product:

A. Peter Tallio.....	Boonton, N. J.
Michael Anodo.....	Dover, N. J.
Henry Schilling.....	Fort Lee, N. J.
Columbia O. K. Ice Cream Co.....	Jersey City, N. J.
Joseph Massary.....	Roebling, N. J.
Theodore Ekonomon.....	Trenton, N. J.

In July, 1911, a license was granted by the Board to Lephakis and Carantino, of Dover, but was subsequently revoked on account of alleged sickness resulting from eating ice cream there manufactured. This matter was thoroughly investigated by officers of this division, and the license was re-issued after certain improvements were made, since which time reinspections show the place to be well conducted.

The act of 1906 contains provisions relative to the construction and equipment of creameries and ice cream factories, and the use of any part of a dwelling for creamery purposes is prohibited. The act approved May 1, 1911, however, was passed at the request and earnest solicitation of ice cream manufacturers and per-

mits the occupation of cellars and other parts of dwelling houses for the manufacture of ice cream under proper conditions. This provision of the law reads as follows:

And provided further, that no ice cream shall, after the passage of this act, be manufactured in any cellar, basement or place, unless after inspection of such place of manufacture by the agents of the Board of Health of the State of New Jersey, a license shall be granted by the said board to the proprietor, corporate or otherwise, of such establishment or factory, certifying that the condition and arrangement of such ice cream factory is sanitary, which said license may be revoked by said board, for cause, at any time.

The Board of Health has never sanctioned the use of underground factories for the manufacture of articles of food. Cellars and basements are usually poorly lighted and ventilated, and bad odors are quite prevalent in such places. The interior surfaces are hard to clean and leaky pipes frequently emit sewer gases. Rubbish, old clothing, fuel and family supplies are also stored in cellars, and frequently rats, roaches and other insects have been seen in great numbers. All of these things have a bearing on sanitary conditions. Our investigations show that ice cream is made in 229 cellars, and that 186 factories are located above ground. Licenses have been granted to 76 factories which are located below ground. Most of these licensed cellar factories are located in Hudson county, and licenses were only recommended after they had complied with the Board's requirements in the matter of smooth, readily cleaned interior surfaces, and proper washing facilities and manufacturing equipment.

We were ably assisted in our endeavors to bring these places up to the law's requirements by the New Jersey Retail Ice Cream and Candy Manufacturers' Association, at whose instance the law was passed, and whose officers recognized the fact that unless the basements were made fit, no license would issue. In some instances they have refused membership in their Association to dealers who failed to make improvements, and have notified us of conditions in factories which they knew would not meet with this Board's approval.

We have adopted the score-card method for ice cream factory inspection and find it satisfactory, as it enables us to place the proper estimate upon each establishment, and shows by its ratings the condition of each factory. There are 14 items scored under the heading of "Equipment," and 9 under the heading of

"Methods." By the use of the score-card we can determine the exact conditions found in these factories and have a satisfactory filing record for future reference. The owner can also be furnished a copy of the score-card and can thus readily see the defects of his place. If he is progressive and willing to improve his surroundings, he may then do so with a full knowledge of the criticisms made by the inspector. The score-card is arranged in two columns, one for "Equipment," which deals with location, surroundings, proper rooms, floors, drainage, interior surfaces, light and ventilation, screens, washing facilities, storage, racks for draining cans, wash basin, soap and towel for use of employes; sanitary condition of apparatus and utensils, and water supply. For these items a total of 32 points is given. Under the heading of "Methods" 34 points are given, which are intended to emphasize the importance of cleanliness and care in handling the materials entering into the manufacture of the product. The items under this head relate to the cleanliness of floors, walls and ceiling, freedom from flies, cleansing of cans and utensils, protection of the raw materials and of the finished product, and the cleanly habits of the employes. Following is a copy of the score-card:

BOARD OF HEALTH OF THE STATE OF NEW JERSEY.

DIVISION OF CREAMERIES AND DAIRIES.

ICE CREAM FACTORY RECORD.

Date.....19..... Score.....*

Name

Street and Number

Town

Raw Materials

Purchased from

Quantity of ice cream manufactured daily.....

Remarks:

Inspector.

EQUIPMENT.	SCORE.		METHODS.	SCORE.	
	Perfect.	Allow.		Perfect.	Allow.
1. Location, above ground.	1	.....	15. Cleanliness of floors...	3	.....
2. Free from contaminating surroundings.....	1	.....	16. Cleanliness of walls and ceiling	4	.....
3. Proper rooms.....	2	.....	17. Freedom from flies ...	2	.....
4. Floors, non-absorbent and properly graded..	3	.....	18. Cans and utensils sterilized (4); scalded or steamed (2); washed with warm water (1).	4	.....
5. Drainage	3	.....	19. Cleanliness of cans and utensils	8	.....
6. Walls and ceiling smooth, tight and cleanable	2	.....	20. Protection of raw materials	3	.....
7. Proper light and ventilation	2	.....	21. Handling of product in process of manufacture	4	.....
8. Screens	2	.....	22. Handling of finished product	2	.....
9. Boiler (4); hot water heater (2).....	4	.....	23. Cleanly appearance of employes	4	.....
10. Refrigeration; mechanical (4); ice box (2).	4	.....		
11. Racks for cans and utensils	2	.....		
12. Wash basin, soap and towel for attendants.	1	.....		
13. Condition of apparatus and utensils.....	3	.....		
14. Water supply.....	2	.....		
Total for Equipment.....	32		Total for Methods.....	34	

Score for Equipment multiplied by 1 equals

Score for Methods multiplied by 2 equals

Total score allowed.

As a result of our investigations into ice cream manufacture, the Board has adopted certain rules for the government of ice cream factories. These rules are twelve in number, and are printed on page 186. They will also be separately printed, and a copy conspicuously posted in every factory in the State:

RULE 1 recommends that ice cream factories shall be above ground, with surroundings that are free from all contamination and refuse accumulations. This rule was recommended because our inspections showed that in many cases ice cream factories were located in buildings contiguous to stables and other fly breeding places.

RULE 2 provides for the proper light and ventilation of all factories, and for suitable floors and drainage systems, as well as smooth interior surfaces. We have found many factory floors to be of poor material. Wooden floors were found to be worn and leaky, and in many cases, there was no system of drainage other than holes bored in the floor, and the waste fluids were allowed to saturate the ground underneath the floor, thereby creating a nuisance. Our files show that of the 415 ice cream factories inspected, 293 had proper cement or other impervious floors, and 24 very much worn and broken cement floors; 93 had wood floors, 25 of which were in poor condition, permitting the waste fluids to escape underneath. We also found that in 5 factories there was no floor other than the earth itself. The table elsewhere published will show improvements in floor construction.

The matter of drainage is a very important feature of sanitation in ice cream factories, and some most unsanitary methods have been unearthed. Our records show that out of 415 ice cream factories, 290 have drains properly trapped and connected with sewers, and 35 are connected with cesspools. 16 drain their waste fluids on the ground outside of the factory, and 7 dispose of their drainage through holes under the factory floor. We have classified 67 as defective, on account of broken drains, untrapped pipes and indirect connections with the sewers.

RULE 3 also provides that all interior surfaces shall be smooth and free from projections or ledges upon which dust and dirt may accumulate. Our records show that 130 factories meet with the requirements of the law in this respect. 285 of them receive no credit on the scores for a compliance with this rule, because the surfaces were rough and in many cases unclean.

RULE 4 provides for the proper location of a factory, and prohibits the manufacture of ice cream in a kitchen, wash room, workshop, &c., or in close proximity to any privy or other contaminating influence. No license has been issued by the Board until the owners of such factories have discontinued their use for laundry work or as living apartments, or until objectionable privies and cesspools have been removed from the premises.

RULES 5 to 8, inclusive, state, in substance, that the owners of all factories shall have a sufficient number of receptacles, made of non-absorbent material, for the storing of milk, cream or ice cream, and shall cause them to be kept clean at all times: that they shall also have a sufficient, pure and wholesome supply of water, adequate facilities for cleansing utensils and containers, and proper racks for draining and storing cans and utensils, &c. The utensils and containers in ice cream factories have been scrutinized very carefully by the inspectors during their investigations, and our records show that only 48 factories were using what might be termed "perfect methods" in cleansing their utensils. In 255 factories, the inspection shows that the cans and utensils were in a fair condition, although they could not be classified as perfectly clean on account of the methods used and the facilities for cleaning them. We found that in 112 factories the cans and utensils were unclean, or what might be termed "poor."

In 34 factories there were good washing facilities; 195 were classified as fair only, and poor facilities were reported in 186 factories. As an example to show the meaning of this last heading, it may be stated that a factory manufacturing 100 quarts of ice cream daily, with no other washing outfit than a one-burner gas stove with a small pot for heating the water, is considered to have very poor cleansing facilities. In other factories, manufacturing very large quantities of ice cream, only the exhaust water of the gasoline engine is used. These practices we have discouraged, and during the year many improvements have been made with respect to more adequate hot water facilities.

RULE 9 states that the re-freezing of milk, cream or ice cream is prohibited. The practice of re-freezing ice cream has been carried on to some extent in this State, and is to be severely condemned on account of the liability of chemical changes taking place in the product, and causing ice cream poisoning.

RULE 10 prohibits the operator or employe of the factory from using his bare hands for the manipulation of the raw substances used in the manufacture of ice cream. Our investigations show that this is a common practice among ice cream manufacturers, and that they have been detected in using their hands in the raw materials or finished product when they were anything but clean.

RULE 11 states that every factory must be equipped with a basin, soap and towel so that the employes can frequently wash their hands. This rule will be insisted upon in our future inspections.

RULE 12 provides for protection against flies and other insects from the first day of April to the thirty-first day of October.

LIST OF ICE CREAM FACTORIES LICENSED BY THE STATE BOARD OF HEALTH.

LOCATION.	PROPRIETOR.	STREET AND NUMBER.
Allenhurst	Grenell & Schenck	
Asbury Park	W. J. Cooper	109 Second St.
"	W. J. Conce	618 Cookman Ave.
"	Kerrus Ice Cream Co.	925 Monroe Ave.
"	Held Ice Cream Co.	406 Monroe Ave.
"	T. J. Winckler	715-717 Madison Ave.
Atlantic City	F. Stadler	10 S. Virginia Ave.
Bay Head	Jas. M. Applegate	Lake Ave.
Bayonne	E. Betsworth	161 Broadway.
"	E. Haas	916 Broadway.
Belmar	W. H. Sanborn.	
Blairstown	Clark Jones.	
Bradley Beach	W. H. Wyckoff	25 Main St.
Bridgeton	Arctic Ice and Milk Co.	110-112 Cohansey St.
Camden	Excelsior Ice Cream Co.	320-324 Taylor Ave.
"	L. Haines Ice Cream Co.	Broadway and Kaighn Ave.
"	Chas. Pfisterer	1174-76 Kaighn Ave.
Collingswood	Maurice J. Murphy	33 Collings Ave.
Dover	Lepaphis & Carantino	21 W. Blackwell St.
"	Orin P. Cole	65 E. Blackwell St.
East Orange	Monroe & Heberling	374 Sixth Ave.
Elizabeth	James J. Norton	278 Second St.
"	Henry Pfeiffer	208 Third St.
Freehold	Fred H. Van Der Burgh	21 W. Jersey St.
Frenchtown	Fred Jennings	42 W. Main St.
Guttenberg	J. P. Lance.	
Hoboken	Standard Ice Cream Co.	695 Adams St.
"	Fred Bremkamp	308 First St.
Hopewell	Herman F. Kusel	1000 Washington St.
Irvington	Edw. R. Whitehead	
Jersey City	J. T. Castle Ice Cream Co.	19-49 Loretta St.
"	Valentine Bachmann	486 Central Ave.
"	Chas. Blum	673 Ocean Ave.
"	J. F. Bormann	473 Ocean Ave.
"	John Boschen	651 Newark Ave.
"	Chas. Bredehorst.	584 Newark Ave.
"	F. Brummer	737 Grand St.
"	H. H. Bullock	1 Foye Place.
"	Henry Cordes	855 Bergen Ave.
"	Wm. Cordes	379 Ocean Ave.
"	Chas. Drefenbach	68 Ocean Ave.
"	R. Goebel	734 West Side Ave.
"	J. Greve	375 Palisade Ave.
"	B. Hanneken	379 Grove St.
"	Wm. Hansen	235 Newark Ave.
"	J. Harting	311 Jackson Ave.
"	August Heins	344 Central Ave.
"	John H. Hess	175 Mercer St.
"	Arthur Jachtman	136 Newark Ave.
"	Chas. Kormeler	801 Ocean Ave.
"	C. Kroncke	491 Grove St.
"	Chas. Kuhlken	486 Jackson Ave.
"	John Lindeboom	253 Central Ave.
"	Mehrtens & Mohlenback	453 Grove St.
"	H. Meyer	749 Bergen Ave.
"	Peter Meyer	295 Central Ave.
"	August Mueller	425 Jackson Ave.
"	L. J. Piercy	490 Bergen Ave.
"	Henry Prigge	181 Monticello Ave.
"	C. E. Recker	126 Monticello Ave.
"	A. Reyelt	728 West Side Ave.
"	Chas. Reyelt	348 Communipaw Ave.
"	Henry Reyelt	184 Ocean Ave.
"	R. Schnepels	216 Newark Ave.
"	Peter Schult	342 Seventh Ave.
"	Henry Schwacke	456 West Side Ave.
"	H. Siemsen	766 West Side Ave.
"	Henry Winter	592 West Side Ave.
"	A. Wintgen	382 Central Ave.
Morristown	Wilbur F. Day	South St.
"	Herman Vielt	20 Park Place.
Newark	L. Ramberger & Co.	Market and Halsey Sts.

LOCATION.	PROPRIETOR.	STREET AND NUMBER.
Newark	Bernhard Cluss	19 Washington Ave.
"	Carl Doerr	405 Clinton Ave.
"	Hahne & Co.	651 Broad St.
"	Hymann Moskow	7 Belmont Ave.
"	New Jersey Ice Cream Co.	316 Mt. Pleasant Ave.
"	Geo. W. Phillips	721 Summer Ave.
"	Marion Sandall	855 Broad St.
New Brunswick	C. E. Bedford	6 French St.
"	Graham & McCormack	74-76 Church St.
"	E. A. Intermann	325 George St.
"	John P. Peper	36 Albany St.
Orange	Y. Wallach	236 Main St.
"	Frank Ponzul	16 Cone St.
"	Louis C. Stock	377 Main St.
"	J. E. Waterman	312 Main St.
Passaic	Frank M. Uehlein	292 Main Ave.
Paterson	M. W. Frank	395 Totowa Ave.
"	J. V. Ernest	Main and Market Sts.
"	R. C. Hill	113 Broadway.
"	P. J. Hunter	87 Broadway.
"	M. Potash (Eagle Ice Cream Co.)	15 Clinton St.
"	Wm. Weda	210 Market St.
Plainfield	Debele & Stahl	111-113 Somerset St.
"	Demoll & Co.	53 W. Front St.
"	C. H. Hall	508 Watchung Ave.
"	P. B. Hodge	Watching Ave. & Front St.
"	E. R. Mills	1217 W. Front St.
"	L. W. Randolph	143 W. Front St.
"	Schreiner Bros.	152 Park Ave.
Princeton	J. B. Benwick	82 Nassau St.
Red Bank	Oscar Hesse	9 W. Front St.
"	Elizabeth Laug	29 Broad St.
Rutherford	C. Vanderhorst	2 Erie Ave.
Somerville	C. M. Dumas	22 W. Main St.
Trenton	William Allfather	N Warren & Heading Sts.
"	J. F. Hancock's Sons Co.	26 Commerce St.
"	Hildebricht Catering Co.	W. Hanover & Chancery Sts
"	Max Keller	224 S. Warren St.
"	Gregorias Loukapoulas	118 N. Warren St.
"	Manning & Brink	419-421 N. Montgomery St.
"	John Newman	Calhoun & Passaic Sts.
"	Wm. B. Riker & Son Co.	Broad & State Sts.
"	Alvah Smith	271 Hamilton Ave.
Union Hill	H. Glandorf	126 Fourth St.
"	Mrs. H. Royer	292 Bergenline Ave.
"	Mrs. J. Minzman	245 Bergenline Ave.
"	J. Steinbecker	122 Fourth St.
West Hoboken	William Heintz	485 Palisade Ave.
"	William Heis	245 Summit St.
"	Chas. Mahken	245 Clinton St.
"	H. Von Spreckelsen	413 Spring St.
West New York	Henry Tientjen	617 Bergenline Ave.
Woodbury	John Urban	174 S. Broad St.

The following table shows the number of inspections made of each ice cream factory reported, the conditions found in the building and equipment, the methods used in the manufacture of the product, and the improvements, if any, which have been made during the year:

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TABLE SHOWING THE GENERAL CONDITION OF ICE CREAM FACTORIES AND THE IMPROVEMENTS MADE DURING THE YEAR.

TOWN.	PROPRIETOR.	EQUIPMENT AND METHODS OBSERVED ON FIRST INSPECTION.							No. of Inspections.	IMPROVEMENTS MADE DURING THE YEAR.	
		Location.	Floor.	Drainage.	Interior Surfaces.	Washing Facilities.	Cleanliness of Utensils.	Proper Backs for Cans.			Methods.
Allenhurst	Greenell & Schenck	Basement	Cement	City sewer	Rough	Good	Clean	Yes	Poor	2	
Arlington	De Vince Brothers	Rear of store.	Wood: poorly graded.	No direct sewer connections.	Smooth	Poor	Fair	No	Fair	2	Practice of removing ice cream from dasher with bare hands discontinued.
Asbury Park	R. B. Patterson	First floor	Wood	Town sewer	Smooth	Good	Clean	Yes	Fair	1	Not yet reinspected.
"	W. J. Couce	First floor	Tight wood	Catch basin to sewer.	Rough	Good	Clean	Yes	Fair	1	Not yet reinspected.
"	A. J. Coules	Adjoining stable	Cement	City sewer	Smooth	Fair	Poor	No	Fair	4	Not yet reinspected. Ceiling made smooth.
"	Samuel Kaplan	Adjoining hen house	Cement and wood	City sewer	Rough	None	Unclean	No	Poor	5	New racks. Factory interior cleaned and painted. Unused articles removed. Rough.
"	Kurros Ice Cream Co.	Detached building	Wood: poor	On ground	Rough	Poor	Fair	No	Poor	1	Ceiling sheathed. New factory started.
"	Frederick Meeks	Detached building	Wood: poor	Under floor	Rough	Poor	Fair	No	Poor	2	New concrete building. Floors connected with sewer. Can racks. Smooth tile.
Atlantic City	Held Ice Cream Co.	Basement	Cement	City sewer	Rough	Good	Fair	No	Fair	1	Proper wash room. Screens.
"	T. J. Winckler	Detached building	Cement	City sewer	Rough	Fair	Fair	Yes	Fair	1	Not yet reinspected.
"	Dimmock & Reardon.	Detached building: bad surroundings.	Wood: poor	Dipped from catch basin.	Rough	Fair	Fair	Yes	Fair	1	Not yet reinspected.
"	Perlmutter & Stabler	Rear of store.	Cement and wood	City sewer	Rough	Good	Unclean	No	Poor	1	Ceiling sheathed.
"	Samuel Wardell	Detached building	Wood	City sewer	Rough	Good	Clean	Yes	Poor	1	None.
Atlantic Highlands	C. C. Youst	Detached building	Wood: poor	Under floor	Rough	Poor	Poor	No	Fair	1	None.
"	Ira Antonides	Cellar	Cement	Under bench floor.	Rough	Poor	Poor	No	Poor	1	None.
"	G. E. Jenkinson, Sr.	Disseminated building	Cement	Sewer	Wood: lumpy	Poor	Poor	No	Poor	2	None. Owner requested more time for improvements.
Bay Head	Rolanelli	Adjoining store	Wood	Under floor	Rough	Good	Fair	Yes	Fair	1	Not yet reinspected.
"	James M. Applegate	Cellar	Cement	Sewer	Rough	Good	Fair	Yes	Fair	1	Not yet reinspected.
Bayonne	Henry Hoffman	Detached building: bad surroundings.	Cement	Discharged in lake.	Smooth	Fair	Good	Yes	Fair	1	Not yet reinspected.
"	E. Betworth	Cellar	Cement	Discharged in lake.	Rough	Poor	Unclean	No	Poor	1	Not yet reinspected.
"	M. Lindendy	Cellar	Cement	City sewer	Smooth	Fair	Fair	No	Fair	1	Not yet reinspected.
"	Henry Mehtens	Cellar	Cement	City sewer	Rough	Poor	Very poor.	No	Poor	1	Room partitioned off. Ceiling sheathed. Can racks provided. Walls lime-washed.
"	Joseph Rider	Cellar	Cement	City sewer	Rough	Poor	Poor	No	Poor	3	Premises cleaned. Ceiling sheathed.
"	D. Schilling	Cellar	Cement	Drain stopped up.	Rough	Poor	Poor	No	Poor	4	None.
"	R. F. Visono	Cellar	Cement	City sewer	Rough	Poor	Fair	No	Fair	4	Drain repaired. Ceiling sheathed and lime-washed. Can racks constructed.
Belmar	C. J. Weber	Rear of store.	Cement	On ground	Rough	Poor	Fair	No	Fair	1	Ceiling sheathed.
Bernardsville	Wm. H. ground	Detached building	Cement	On ground	Rough	Poor	Fair	No	Fair	1	Walls and ceiling sheathed. Can racks and screens provided.
Bloomfield	E. C. Lameron	Rear of store.	Wood	Ocean shore	Smooth	Fair	Good	Yes	Poor	3	Interior lime-washed.
Boonton	Clark Jones	Rear of store.	Wood	On ground	Rough	Poor	Fair	Yes	Fair	1	Not yet reinspected.
"	Mrs. E. Holloway	Basement	Wood	On ground	Smooth	Poor	Fair	Yes	Fair	1	Not yet reinspected.
"	Caesar Colombo	Rear of store.	Cement	Sewer	Smooth	Fair	Clean	Yes	Good	1	Not yet reinspected.
"	John Corvi	Cellar	Cement and wood	On ground	Rough	Poor	Fair	No	Poor	1	Not yet reinspected.
"	John Corvi	Cellar	Cement and wood	On ground	Rough	Poor	Fair	No	Poor	1	Not yet reinspected.
Boond Brook	Antonio Ratti	Rear of store.	Cement	To canal	Rough	Good	Fair	No	Fair	1	Roomy partitioned off and whitewashed.
Bradley Beach	Harvey	Detached building: bad surroundings.	Cement	Sewer	Part rough	Poor	Poor	No	Poor	1	None.
"	F. M. Junkin	Adjoining store	Wood	Under floor	Smooth	Fair	Fair	Yes	Fair	1	Balance of ceiling made smooth. Better methods in cleaning utensils.
"	W. H. Wrekon	Adjoining store	Wood	On ground	Smooth	Fair	Fair	No	Fair	1	Not yet reinspected.
"	W. H. Wrekon	Near horse stable and manure pit	Poor cement	Sewer	Rough	Fair	Good	No	Fair	1	Not yet reinspected.
Bridgeton	Aretic Ice and Milk Co.	Rear of condensary	Cement	To brook	Part smooth	Good	Poor	Yes	Poor	1	None.
Camden	A. E. Butcher	Detached building	Cement	Sewer	Smooth	Good	Fair	Yes	Fair	1	Interior of factory cleaned. Walls and ceiling made smooth. Floor repaired.
"	Excelsior Ice Cream Co.	Detached building: adjoin stable	Cement	Sewer	Rough	Poor	Poor	No	Poor	1	Not yet reinspected.
"	Albert Four	Two-story building	Cement	Sewer	Smooth	Poor	Poor	Yes	Poor	3	Hot water tank installed.
"	Charles Fonlon	Rear of bakery	Cement: broken	Indirectly to sewer.	Rough	Poor	Fair	Yes	Fair	1	Factory lime-washed. Separate mixing room. New mixing vat.
"	Francisco Ice Cream Co.	Rear of store and dwelling	Cement	Sewer	Rough	Poor	Fair	No	Fair	1	Interior painted.
"	L. Hayes Ice Cream Co.	Detached building	Cement	Sewer	Rough	Poor	Fair	No	Fair	1	None.
"	Alfred Metzner	Detached building	Cement	Sewer	Rough	Good	Fair	No	Fair	1	None.
Cape May	Charles Webster	Detached building	Wood	Defective	Rough	Good	Fair	No	Fair	1	New boiler for heating water installed.
"	Mrs. R. E. Barron	Rear of store and dwelling.	Cement	Sewer	Smooth	Poor	Fair	No	Poor	1	Condition of toilet improved.
"	Wm. G. Essen	Rear of restaurant	Wood	Sewer	Smooth	Poor	Fair	No	Poor	1	Interior painted.
"	F. W. Wolf	Rear of store and dwelling.	Cement and wood	Sewer	Smooth	Poor	Fair	No	Poor	1	New wash vats and hot water heater. Separate mixing room.
Collingswood	Chas. H. Eva	Rear of store.	Cement	Sewer	Rough	Good	Fair	Yes	Good	1	Interior lime-washed. Screens provided.
"	M. J. Murphy	Adjoining stable	Poor	On ground	Rough	Poor	Fair	No	Poor	1	None.
"	Mike	Shed adjoining dwelling.	Cement	Loose plank	Rough	Poor	Fair	No	Poor	1	Not yet reinspected.
"	Baciloli & Zazzali	Small shed	Cement	Cesspool	Rough	None	Fair	No	Fair	2	Not yet reinspected.
"	Lepahnik & Carantino	Cellar	Cement	Cesspool	Rough	None	Fair	No	Fair	1	Ceiling sheathed. Interior painted. New can racks.
"	Frank Argentino	Detached building	Cement	Catch basin to sewer.	Part rough	Poor	Bad	No	Bad	1	None. Notified to cease manufacturing ice cream.
Dunellen	F. W. Holloway	Cellar	Cement	Cesspool	Smooth	Fair	Poor	No	Poor	1	Interior lime-washed. Cleaner utensils.
"	Paul Ratti	Detached building	Cement	Cesspool	Rough	Poor	Fair	Yes	Poor	3	Better washing facilities. New can racks. Cleaner utensils.
East Orange	John English	Cellar	Cement	Sewer	Rough	Fair	Fair	No	Fair	1	Not yet reinspected.
"	Philip A. Fargano	Cellar	Cement	Sewer	Rough	Fair	Fair	No	Poor	1	Not yet reinspected.
"	Moore & Hebertine	Detached building	Cement and wood	Sewer	Rough	Fair	Fair	Yes	Fair	2	Ceiling sheathed. Interior painted. Drainage improved. Other improvements.
"	John Ottino	Cellar	Cement	Sewer	Smooth	Fair	Fair	Yes	Fair	1	None.
"	"	Cellar	Cement	Sewer	Smooth	Fair	Fair	No	Fair	1	None.

TABLE SHOWING THE GENERAL CONDITION OF ICE CREAM FACTORIES AND THE IMPROVEMENTS MADE DURING THE YEAR—Continued.

TOWN.	PROPRIETOR.	EQUIPMENT AND METHODS OBSERVED ON FIRST INSPECTION.										No. of Inspections.	IMPROVEMENTS MADE DURING THE YEAR.
		Location.	Floor.	Drainage.	Interior Surfaces.	Washing Facilities.	Cleanliness of Utensils.	Proper Racks for Cans.	Methods.				
East Orange	Francis J. Pursell	Cellar	Cement	Sewer	Rough	Poor	Fair	No	Fair	2	Extension of time for alterations.		
	William Rose	Cellar	Cement	Sewer	Rough	Fair	Fair	No	Fair	1	Interior lime-washed.		
East Rutherford	R. Celozes	Cellar	Cement	Sewer	Rough	Very poor	Fair	No	Fair	1	Location removed.		
Elizabeth	Spero Arbes	Cellar	Cement	Sewer	Rough	Good	Fair	No	Fair	1	Not yet reinspected.		
	W. C. Boyle	Cellar	Cement	Sewer	Rough	Fair	Fair	No	Fair	1	None.		
	James Courlas	Cellar	Cement	Sewer	Rough	Poor	Fair	No	Fair	1	None.		
	Antonetti Dogli	Rear of store.	Cement	Sewer	Smooth	Fair	Poor	No	Poor	1	None.		
	Isaac Goldner	Rear of store.	Cement	Sewer	Rough	Fair	Fair	Yes	Fair	1	Can racks provided.		
	Graham & McCluskey	Cellar	Cement	Sewer	Rough	Fair	Fair	Yes	Fair	1	None.		
	Abra Krollshemer	Cellar	Cement	Sewer	Rough	Fair	Fair	Yes	Fair	1	Not yet reinspected.		
	Mrs. Ella Kuzman	Cellar	Cement	Sewer	Rough	Fair	Fair	No	Fair	1	Can racks provided.		
	James J. Norton	Cellar	Cement	Sewer	Rough	Fair	Fair	Yes	Fair	1	None.		
	Henry Pfeiffer	Cellar	Cement	Sewer	Rough	Fair	Fair	Yes	Fair	1	Can racks provided.		
	A. T. Ross	Cellar	Cement	Sewer	Rough	Fair	Fair	Yes	Fair	1	None.		
	Fred. Schaeztle	Rear of dwelling.	Wood	Wood	Rough	Poor	Fair	No	Poor	1	Ceiling sheathed.		
	John Seedorf	Cellar	Cement	Sewer	Rough	Fair	Fair	No	Poor	1	Ceiling sheathed and can rack provided.		
	Richard Smith	Cellar	Cement	Sewer	Smooth	Fair	Fair	No	Poor	1	None.		
	Angel Stathakis	Cellar	Cement	Sewer	Rough	Fair	Fair	No	Fair	1	None.		
	Edw. Switzgable	Cellar	Cement	Sewer	Rough	Fair	Fair	No	Fair	1	None.		
	Thomas J. Taylor	Cellar	Cement	Sewer	Rough	Poor	Fair	No	Poor	1	None.		
	Emmett Thomas	Cellar	Cement	Sewer	Rough	Poor	Fair	No	Fair	1	None.		
Englewood	Fred. H. Vanderschuer	Detached building	Cement	Sewer	Rough	Fair	Fair	No	Poor	1	None.		
	F. W. Bergendahl	Cellar	Cement	Sewer	Rough	Fair	Fair	No	Fair	1	None.		
	Prato & Ravara	Rear of store.	Wood and cement	Defective	Smooth	Fair	Fair	No	Fair	1	Ceiling sheathed. Cleaner utensils. Can racks provided.		
Florence	Chester Emmons	Detached building	Cement	Sewer	Smooth	Fair	Poor	No	Poor	1	None.		
Fort Lee	Henry Schilling	Half basement; had surroundings.	Broken cement	Very poor	Rough	Poor	Poor	No	Poor	1	Not yet reinspected.		
Freehold	E. Jennings	Cellar	Broken cement	Very poor	Rough	Poor	Poor	No	Poor	1	Not yet reinspected.		
Frenchtown	John T. McBethney	Detached building	Poor construction	Defective	Rough	Fair	Fair	No	Poor	1	Notified by Board to cease manufacturing ice cream.		
	F. W. Hillip	Detached building	Poor wood	Under floor	Rough	Poor	Fair	No	Fair	1	Interior cleaned. New wash tub provided.		
Gloucester	J. P. Lane	Half basement	Cement	Sewer	Smooth	Good	Fair	Yes	Fair	1	None.		
	John A. Cogan	Rear of store	Cement	Sewer	Smooth	Fair	Fair	Yes	Fair	1	Not yet reinspected.		
	H. Hill	Detached building	Cement	Sewer	Rough	Poor	Fair	No	Poor	1	Not yet reinspected.		
Guttenberg	Edw. Schaefer	Cellar	Cement	Sewer	Rough	Fair	Fair	Yes	Fair	1	Not yet reinspected.		
	Standard Ice Cream Co.	Detached building	Cement	Sewer	Smooth	Poor	Fair	Yes	Fair	1	Not yet reinspected.		
	J. Stickle	Rear of bakery; had surroundings.	Broken cement	Sewer	Rough	Very poor	Fair	No	Fair	4	Interior painted. More windows. Separate mixing room. can racks. 1.		
Hackensack	Peter L. Dwight	Rear of store.	Cement	Sewer	Rough	Fair	Poor	No	Very poor	2	Better storage facilities for raw materials. New building planned.		
Hackettstown	W. F. Howell	Rear of store.	Poor cement	Bad	Rough	Fair	Fair	No	Fair	1	Not yet reinspected.		
	J. C. Werts	Detached building	Earth	Bad	Rough	Poor	Fair	Yes	Poor	1	Not yet reinspected.		
Hanford	Wm. M. Schlicht	Rear of bakery.	Wood	Bad	Rough	Poor	Fair	No	Poor	1	Not yet reinspected.		
Hammonon	Jno. M. Schlicht	Detached building	Wood	Bad	Rough	Poor	Fair	No	Poor	1	Not yet reinspected.		
	Wm. F. Krimmel	Rear of bakery.	Wood	Bad	Rough	Fair	Fair	No	Fair	1	Not yet reinspected.		
	E. Sad	Rear of bakery.	Cement	Sewer	Rough	Fair	Fair	No	Fair	1	Not yet reinspected.		
Harrison	Charles Bosc	Rear of store	Poor wood	Bad	Rough	Fair	Fair	No	Fair	1	Not yet reinspected.		
	A. Feiden	Cellar	Cement	Sewer	Rough	Fair	Fair	No	Fair	1	Not yet reinspected.		
Highland Beach	M. E. Rosenbaum	Cellar	Cement	Sewer	Rough	Fair	Fair	No	Fair	1	Not yet reinspected.		
Hightstown	Edw. Schaefer	Rear of store.	Cement	Cesspool	Rough	Fair	Fair	Yes	Fair	1	Not yet reinspected.		
Hoboken	Fred. Bromkamp	Detached building	Poor wood	Bad	Rough	Fair	Fair	Yes	Fair	1	Not yet reinspected.		
	Fred. Breitung	Rear of store	Cement	Sewer	Smooth	Fair	Fair	Yes	Fair	1	Not yet reinspected.		
	H. Fritz	Cellar	Cement	Sewer	Rough	Fair	Fair	No	Fair	1	None.		
	John Fritz	Cellar	Poor wood	Sewer	Smooth	Fair	Fair	No	Fair	1	None.		
	C. Rimmerman	Cellar	Poor wood	Sewer	Rough	Fair	Poor	Yes	Poor	1	None.		
	Herman Koval	Cellar	Cement	Sewer	Smooth	Fair	Fair	No	Fair	1	None.		
	C. Rimmerman	Cellar	Cement	Sewer	Rough	Fair	Poor	No	Fair	1	Can racks provided. Cleaner cans. Rubbish removed.		
	G. Ostkus	Rear of store.	Cement	Defective	Smooth	Fair	Poor	No	Fair	1	Cleaner utensils. Can racks provided.		
	Gas Puzocci	Cellar	Cement	Sewer	Rough	Poor	Poor	No	Poor	1	Cleaner utensils. Improved drainage.		
Holly Beach	Wm. H. Hart	Rear of store.	Cement	Sewer	Smooth	Poor	Poor	Yes	Poor	1	Not yet reinspected.		
Hopewell	Edw. Whitehead	Cellar	Cement	Sewer	Rough	Good	Fair	No	Poor	1	Not yet reinspected.		
Irvine	T. Castle Ice Cream Co.	Detached building	Cement	Sewer	Smooth	Fair	Fair	No	Fair	1	Not yet reinspected.		
Irvington	America Ice Cream Co.	Three-story building	Cement	Sewer	Smooth	Fair	Fair	No	Fair	1	Not yet reinspected.		
Jersey City	Spero Attanasio	Two-story building	Cement	Sewer	Smooth	Fair	Fair	Yes	Good	1	None.		
	Charles Baraban	Rear of store.	Cement and wood.	Sewer	Smooth	Fair	Fair	Yes	Fair	1	Recommendations made for improved surroundings.		
	Charles Blum	Cellar	Cement	Sewer	Rough	Fair	Fair	Yes	Poor	1	Can racks provided.		
	F. Borneman	Cellar	Cement	Sewer	Smooth	Fair	Fair	No	Fair	1	Ceiling sheathed.		
	Jno. Roehen	Cellar	Cement	Sewer	Smooth	Fair	Fair	Yes	Fair	1	Ceiling sheathed.		
					Rough	Fair	Fair	Yes	Fair	1	None.		
					Good	Fair	Clean	Yes	Fair	1	Ceiling made smooth.		

TABLE SHOWING THE GENERAL CONDITION OF ICE CREAM FACTORIES AND THE IMPROVEMENTS MADE DURING THE YEAR—Continued.

TOWN.	PROPRIETOR.	Location.	Floor.	Drainage.	Interior Surfaces.	Washing Facilities.	Cleanliness of Utensils.	Proper		No. of Inspections.	IMPROVEMENTS MADE DURING THE YEAR.
								Racks for Cans.	Methods.		
Jersey City	Chas. Bredehorst	Cellar	Cement and wood	Sewer	Smooth	Fair	Poor	Yes	Poor	2	Hubbish removed from factory. Sewer drain repaired.
	E. Bruner	Cellar	Cement	Sewer	Rough	Fair	Poor	Yes	Fair	2	Ceiling sheathed. Screens provided.
	J. H. Bullock	Cellar	Cement	Sewer	Rough	Fair	Poor	Yes	Fair	2	Ceiling sheathed.
	Chas. Burdick	Cellar	Cement	Sewer	Smooth	Fair	Poor	Yes	Fair	2	None.
	Two-story building	Cellar	Cement	Sewer	Rough	Fair	Poor	Yes	Poor	2	None.
	Columbia O. K. Ice Cream Co.	First floor of horse stable.	Cement	Sewer	Rough	Fair	Poor	No	Poor	3	None.
	Henry Cordes	Cellar	Cement	Sewer	Smooth	Fair	Good	Yes	Fair	2	Notified by Board to cease the manufacture of ice cream.
	Wm. Cordes	Cellar	Cement	Sewer	Smooth	Fair	Fair	Yes	Fair	2	None.
	Chas. Dreyenbach	Cellar	Cement	Sewer	Smooth	Fair	Fair	Yes	Fair	2	None.
	Marlin Fritts	Cellar	Cement	Sewer	Smooth	Fair	Fair	No	Good	1	Not yet reinspected.
	L. Greve	Cellar	Wood	Sewer	Part rough	Fair	Fair	Yes	Fair	1	Not yet reinspected.
	B. Goebel	Cellar	Cement	Sewer	Smooth	Fair	Fair	No	Fair	1	Not yet reinspected.
	Chas. Frisch	Rear of store.	Wood	Sewer	Rough	Fair	Fair	Yes	Fair	1	Not yet reinspected.
	Wm. Hanneken	Cellar	Cement	Sewer	Smooth	Fair	Fair	Yes	Fair	1	Not yet reinspected.
	Haas Brothers	Rear building	Cement	Sewer	Smooth	Fair	Poor	Yes	Poor	1	Not yet reinspected.
	Wm. Hanneken	Cellar	Cement	Sewer	Smooth	Fair	Fair	Yes	Poor	2	Cleaner utensils. Better methods.
	J. Harting	Cellar	Cement	Sewer	Rough	Fair	Fair	Yes	Fair	2	Sewer drain improved.
	August Helms	Cellar	Cement	Sewer	Smooth	Fair	Fair	Yes	Fair	2	Ceiling repaired.
	Edin H. Hess	Cellar	Cement	Sewer	Smooth	Fair	Good	Yes	Good	2	None.
	D. Howell	Cellar	Cement and wood	Sewer	Smooth	Fair	Good	Yes	Good	1	Not yet reinspected.
	Arthur Joachim	Cellar	Cement	Sewer	Smooth	Fair	Good	Yes	Poor	3	None.
	Chas. Kormuseder	Cellar	Cement	Sewer	Smooth	Fair	Good	Yes	Fair	1	Brain plus repaired. Toilet removed from factory.
	C. Kromeke	Cellar	Cement and wood	Sewer	Smooth	Fair	Good	Yes	Fair	1	Not yet reinspected.
	Chas. Kuhlken	Cellar	Cement	Sewer	Smooth	Fair	Good	Yes	Fair	1	Ceiling made smooth. Walls lime-washed.
	John Lindboom	Cellar	Cement	Sewer	Smooth	Fair	Fair	Yes	Good	5	Ceiling made smooth.
Louis Mayers	Cellar	Cement	Sewer	Rough	Fair	Good	Yes	Good	1	Not yet reinspected.	
Mehrens & Mollenbach	Cellar	Cement	Sewer	Rough	Fair	Fair	Yes	Good	1	Not yet reinspected.	
H. Meyer	Cellar	Cement and wood	Sewer	Rough	Fair	Fair	Yes	Poor	2	Not yet reinspected.	
Peter Meyer	Cellar	Cement	Sewer	Rough	Fair	Fair	Yes	Poor	2	Ceiling made smooth. Better methods.	
August Miller	Cellar	Cement	Sewer	Smooth	Fair	Fair	Yes	Poor	2	Ceiling made smooth. Factory room partitioned.	
Otto Neusel	Cellar	Cement	Defective	Smooth	Fair	Fair	Yes	Fair	2	Floor repaired. Better methods.	
L. J. Perry	Cellar	Cement	Smooth	Smooth	Good	Fair	Yes	Poor	1	Not yet reinspected.	
Paula Brothers	Rear of store.	Broken cement	Sewer	Rough	Fair	Poor	Yes	Poor	3	Not yet reinspected.	
Henry Prigge	Cellar	Cement	Sewer	Smooth	Fair	Fair	Yes	Poor	3	None.	
C. E. Rector	Cellar	Cement	Sewer	Smooth	Fair	Fair	Yes	Fair	2	None.	
A. Reysel	Cellar	Cement	Defective	Smooth	Fair	Poor	No	Poor	2	Ceiling sheathed.	
A. Reysel	Cellar	Cement	Smooth	Smooth	Fair	Fair	Yes	Poor	2	Not yet reinspected.	
Henry Reyselt	Rear of store.	Cement	Sewer	Smooth	Fair	Fair	Yes	Fair	1	Not yet reinspected.	
George Schmidt	Cellar	Cement	Sewer	Smooth	Fair	Fair	Yes	Fair	3	Room partitioned. Ceiling sheathed. Lime-washed.	
R. Schaeffels	Cellar	Broken cement	Sewer	Smooth	Fair	Fair	Yes	Fair	3	Receptacles cleaned.	
Chas. H. Schwaner	Cellar	Cement	Sewer	Rough	Fair	Good	Yes	Good	3	None.	
Ferd. Schmit	Rear of store.	Wood	Sewer	Smooth	Fair	Fair	Yes	Fair	1	Not yet reinspected.	
Henry Schwacke	Cellar	Cement	Sewer	Smooth	Fair	Fair	Yes	Poor	1	Not yet reinspected.	
T. J. Schwacke	Cellar	Cement	Sewer	Smooth	Fair	Fair	Yes	Fair	1	Not yet reinspected.	
H. Schwaner	Cellar	Wood	Sewer	Smooth	Fair	Clean	Yes	Good	2	Not yet reinspected.	
John Stechman	Cellar	Cement	Sewer	Smooth	Fair	Clean	Yes	Good	1	Not yet reinspected.	
Nicholas Teuboldt	Cellar	Cement	Sewer	Rough	Fair	Fair	Yes	Fair	2	None.	
Henry Winter	Cellar	Cement	Sewer	Smooth	Fair	Fair	Yes	Fair	1	Ceiling sheathed.	
A. Wintgen	Cellar	Cement	Sewer	Smooth	Fair	Clean	Yes	Good	1	Not yet reinspected.	
Keyport	Henry Wintgen	Rear of store.	Floor wood	Sewer	Rough	Fair	No	Good	1	Not yet reinspected.	
Keyport	E. W. Snyder	Separate building	Cement	Sewer	Smooth	Fair	No	Good	1	Not yet reinspected.	
Lambertville	Joseph Lambert	Adjoining store	Cement	Cesspool	Smooth	Fair	Yes	Fair	1	Not yet reinspected.	
Lambertville	Edgar T. Phillips	Rear of store	Floor wood	Defective	Smooth	Poor	No	Poor	1	Not yet reinspected.	
Long Branch	Jerry Morano	Cement building	Cement	Sewer	Smooth	Fair	No	Poor	1	None.	
Madison	Hicks Manufacturing Co.	Cellar	Cement	Sewer	Smooth	Fair	No	Poor	1	Not yet reinspected.	
Madison	Kyrene Hise	Rear of store.	Wood	Sewer	Rough	Fair	No	Fair	1	None.	
Madison	Sugar Bowl Co.	Cellar	Cement	Sewer	Rough	Fair	Good	Yes	Fair	1	Not yet reinspected.
Merchantville	Joseph Hatti	Cellar	Wood	Sewer	Catch basin to sewer.	Fair	Fair	No	Fair	1	Not yet reinspected.
Merchantville	William Craig	Rear of building	Wood	Sewer	Smooth	Fair	No	Fair	3	None.	
Montclair	Wm. Stumm	Rear of bakery	Cement	Sewer	Part rough	Fair	Poor	No	Fair	1	Not yet reinspected.
Montclair	Jas. A. Andersakes	Cellar	Cement	Sewer	Low ceiling	Poor	Fair	No	Fair	1	Not yet reinspected.
Montclair	David H. Baldwin	Cellar	Defective	Rough	Smooth	Poor	No	Fair	2	Ceiling repaired.	
Montclair	C. Engelson & Son	Cellar	Broken cement	Smooth	Smooth	Fair	Yes	Fair	2	None.	
Montclair	Wm. Engelmann	Cellar	Cement	Sewer	Rough	Fair	Yes	Fair	3	None.	
Moorestown	Wm. Niederhuser	Adjoining horse stable.	Defective	Smooth	Poor	Fair	Yes	Poor	3	None.	
Moorestown	Smith & Torry	Back yard	Defective	Smooth	Fair	Fair	Yes	Fair	3	None.	
Moorestown	Richard Hans	Adjoining bakery	Defective	Smooth	Poor	Poor	No	Poor	1	None.	
Morrisstown	Wilbur E. Day	Behind store.	Cement	Sewer	Smooth	Fair	Yes	Fair	1	Out of business.	
Morrisstown	Horuan Vloch	Rear of store.	Cement	Cesspool	Smooth	Good	Yes	Good	1	Not yet reinspected.	
Morrisstown							No	Fair	1	Not yet reinspected.	

TABLE SHOWING THE GENERAL CONDITION OF ICE CREAM FACTORIES AND THE IMPROVEMENTS MADE DURING THE

TOWN.	PROPRIETOR.	Location.	Floor.	EQUIPMENT AND METHODS OBSERVED ON FIRST INSPECTION.					Proper Racks for Cans.	Me
				Drainage.	Interior Surfaces.	Washing Facilities.	Cleanliness of Utensils.	Me		
Newark	John Ayers & Co.	Cellar	Cement and wood	Sewer	Rough	Fair	Fair	Yes	Fair	
"	"	Cellar	Cement	Sewer	Smooth	Fair	Fair	Yes	Fair	
"	Bon Ton Candy Co.	Cellar	Wood and earth.	Defective	Rough	Poor	Fair	No	Fair	
"	Alfred Borchert	Cellar	Broken concrete	Sewer	Rough	Fair	Poor	No	Poor	
"	Mike Castopoulos	Cellar	Cement	Sewer	Rough	Fair	Fair	No	Fair	
"	Geo. Christoks	Cellar	Cement	Sewer	Rough	Poor	Poor	Yes	Poor	
"	Bernard Class	Cellar	Wood	Sewer	Smooth	Fair	Good	Yes	Good	
"	Mrs. A. Conway	Cellar	Cement	Sewer	Rough	Fair	Good	Yes	Good	
"	Seymore Davis	Cellar	Cement	Sewer	Rough	Fair	Fair	No	Fair	
"	Wm. F. Day & Bro.	Cellar	Cement	Sewer	Rough	Poor	Fair	No	Poor	
"	Antonio Devito	Detached building	Cement	Sewer	Smooth	Fair	Fair	Yes	Fair	
"	Carl Doer	Cellar	Cement	Sewer	Rough	Fair	Fair	No	Fair	
"	W. E. Feilling	Cellar	Cement	Sewer	Smooth	Fair	Fair	No	Fair	
"	A. Gerato	Cellar	Cement	Sewer	Rough	Fair	Poor	No	Fair	
"	C. H. Gerdes	Cellar	Cement	Sewer	Rough	Fair	Poor	No	Fair	
"	A. Giordano	Cellar	Cement	Sewer	Rough	Fair	Poor	No	Fair	
"	Grand Columbia Ice Cream Co.	Detached building; poor surroundings.	Uneven concrete	Sewer	Rough	Poor	Fair	No	Fair	
"	Hazine & Co.	Cellar	Brick, stone and cement	Sewer	Rough	Poor	Poor	Yes	Poor	
"	Geo. Heinemann	Cellar	Cement	Sewer	Smooth	Good	Fair	Yes	Fair	
"	F. M. Heskell	Cellar	Cement	Sewer	Rough	Poor	Good	Yes	Good	
"	H. M. Hitchener	Cellar	Cement	Sewer	Smooth	Good	Fair	Yes	Good	
"	C. D. Huyler	Cellar	Cement	Sewer	Smooth	Good	Fair	Yes	Good	
"	Wm. Lauders	Cellar	Cement	Defective	Rough	Poor	Fair	No	Poor	
"	Patrick Morgan	Cellar	Cement	Sewer	Rough	Poor	Fair	No	Fair	
"	Hyman Moskow	Cellar	Cement	Sewer	Rough	Fair	Fair	No	Fair	
"	J. Muso & Co.	Separate building; bad surroundings.	Cement	Sewer	Rough	Fair	Poor	No	Poor	
"	New Jersey Ice Cream Co.	Three-story building	Cement	Sewer	Smooth	Very poor	Poor	Yes	Poor	
"	Olympia Candy Co.	Cellar	Cement	Sewer	Rough	Poor	Poor	No	Poor	
"	Olympia Candy Co.	Cellar	Cement	Sewer	Rough	Fair	Fair	No	Fair	
"	Geo. D. Pugh	Cellar	Cement	Sewer	Smooth	Poor	Fair	No	Poor	
"	Geo. W. Phillips	Detached building	Cement	Sewer	Smooth	Poor	Fair	No	Fair	
"	C. Richardshauer	Cellar	Poor cement	Sewer	Rough	Poor	Fair	Yes	Poor	
"	Richenbacher & Taylor	Cellar	Cement	Sewer	Rough	Poor	Fair	No	Fair	
"	Wm. D. Biker & Son	Cellar	Cement	Sewer	Smooth	Fair	Fair	Yes	Fair	
"	L. Roski	Cellar	Cement	Sewer	Rough	Poor	Fair	No	Fair	
"	Wm. Ruck	Cellar	Flagstone	Sewer	Smooth	Fair	Fair	Yes	Fair	
"	Marion Sandall	Rear of store	Cement	Sewer	Smooth	Fair	Fair	Yes	Good	
"	F. H. Strubbe	Rear of store	Cement	Sewer	Rough	Fair	Fair	Yes	Fair	
"	Peter Strunks	Cellar	Uneven cement	Sewer	Rough	Poor	Fair	No	Fair	
"	Lestiano Verzagno	First floor of dwelling	Cement	Sewer	Smooth	Poor	Poor	No	Poor	
"	Charles Wahlers	Cellar	Cement	Defective	Rough	Fair	Fair	No	Poor	
"	Chas. Winckelhofer	Cellar	Cement	Sewer	Smooth	Fair	Good	Yes	Good	
New Brunswick	C. E. Bedford	Cellar	Cement	Sewer	Clean	Good	Good	Yes	Good	
"	C. H. Blissett	Cellar	Cement	Sewer	Rough	Fair	Fair	No	Fair	
"	Bruno Bros	Cellar	Cement and wood	Sewer	Rough	Poor	Fair	No	Poor	
"	S. H. Davison	Open porch	Wood	On ground	Open air	Poor	Fair	No	Fair	
"	M. J. Grabam	Rear of store	Cement	Sewer	Rough	Good	Fair	No	Fair	
"	E. A. Intermann	Cellar	Cement	Sewer	Smooth	Fair	Clean	No	Good	
"	T. R. Kolb	Cellar	Cement and brick	Sewer	Smooth	Poor	Fair	No	Poor	
"	F. H. Koop	Detached building	Cement and wood	Sewer	Rough	Fair	Fair	No	Poor	
"	J. J. Monigan	Rear of drug store	Cement and wood	Sewer	Smooth	Fair	Poor	No	Poor	
"	F. Mulvey	Rear of store	Earth	Sewer	Rough	Poor	Poor	No	Poor	
"	N. Y. Ice Cream Co.	Cellar	Cement	Sewer	Rough	Poor	Fair	Yes	Fair	
"	C. Scarpone	Cellar	Cement	Sewer	Defective	Lough	Poor	Yes	Fair	
"	F. W. Schussler	Cellar	Cement	Sewer	Rough	Poor	Fair	No	Poor	
"	M. Wolloch	Cellar	Cement	Sewer	Rough	Fair	Fair	Yes	Fair	
New Egypt	Szager & Hopkins	Adjoining kitchen	Wood	On ground	Rough	Good	Poor	No	Poor	
Ocean City	Denni & Hensley	Above ground; poor surroundings.	Cement	Sewer	Smooth	Fair	Poor	Yes	Poor	
"	Moore & Adams	Cellar	Cement and brick	Sewer	Rough	Fair	Fair	Yes	Poor	
"	H. M. Newkirk	Detached building	Cement	Sewer	Rough	Fair	Poor	No	Fair	
"	Wm. F. Shriver	Rear of laundry	Poor wood	On ground	Smooth	Poor	Fair	No	Fair	
Ocean Grove	Wm. F. Dar	First floor of dwelling	Wood	Sewer	Smooth	Good	Fair	No	Fair	
Orange	Wm. Ortman	Cellar	Cement	Sewer	Cesspool	Fair	Poor	No	Poor	
"	John H. Reese	Cellar	Cement	Sewer	Smooth	Fair	Fair	Yes	Good	
"	Frank Pozzini	Cellar	Cement	Catch basin to sewer	Rough	Fair	Poor	No	Poor	
"	Louis C. Stock	Rear of store	Cement	Catch basin to sewer	Rough	Fair	Fair	No	Fair	
"	Sugar Bowl Co.	Cellar	Cement	Sewer	Rough	Fair	Poor	No	Poor	
"	Thos. Wachenfelt	Back yard	Wood	Sewer	Rough	Fair	Poor	No	Poor	

TABLE SHOWING THE GENERAL CONDITION OF ICE CREAM FACTORIES AND THE IMPROVEMENTS MADE DURING THE YEAR—Continued.

EQUIPMENT AND METHODS OBSERVED ON FIRST INSPECTION.

Location.	Floor.	Drainage.	Interior Surfaces.	Washing Facilities.	Cleanliness of Utensils.	Proper Racks for Cans.	Methods.	No. of Inspections.	IMPROVEMENTS MADE DURING THE YEAR.
Cellar	Cement and wood	Sewer	Rough	Fair	Fair	Yes	Fair	1	Not yet reinspected.
Cellar	Cement	Sewer	Smooth	Fair	Fair	Yes	Fair	2	Interior lime-washed. Cleaner utensils.
Cellar	Wood and earth	Defective	Poor	Poor	Fair	No	Fair	3	None.
Cellar	Broken concrete	Sewer	Rough	Fair	Poor	No	Poor	3	None.
Cellar	Cement	Sewer	Rough	Fair	Fair	Yes	Fair	2	None.
Rear of store	Poor wood	Sewer	Poor	Poor	Fair	No	Fair	1	Interior lime-washed.
Cellar	Cement	Sewer	Smooth	Fair	Good	Yes	Good	1	Not yet reinspected.
Cellar	Cement	Sewer	Rough	Fair	Good	Yes	Good	2	Ceiling sheathed. Interior lime-washed.
Cellar	Cement	Sewer	Rough	Fair	Fair	No	Fair	1	Not yet reinspected.
Cellar	Wood	Catch basin to sewer	Rough	Fair	Fair	No	Fair	4	Cement floor. Interior surfaces cleansed and made smooth.
Detached building	Cement	Sewer	Rough	Fair	Fair	No	Poor	1	Not yet reinspected.
Cellar	Cement	Sewer	Smooth	Fair	Fair	Yes	Fair	1	None.
Cellar	Cement	Sewer	Rough	Poor	Fair	No	Fair	2	None.
Cellar	Cement	Sewer	Smooth	Fair	Fair	Yes	Fair	1	Not yet reinspected.
Cellar	Cement	Sewer	Rough	Fair	Poor	No	Fair	3	Can racks provided. Cleaner utensils.
Cellar	Cement	Sewer	Rough	Poor	Poor	Yes	Fair	3	Room partitioned. Ceiling sheathed. Interior lime-washed. New can racks.
Cellar	Cement	Sewer	Smooth	Good	Fair	Yes	Fair	2	Better methods in handling product.
Cellar	Cement	Sewer	Rough	Poor	Good	Yes	Good	4	Room partitioned. Ceiling sheathed.
Cellar	Cement	Sewer	Rough	Poor	Fair	No	Fair	1	Preparing to change factory location.
Cellar	Cement	Sewer	Smooth	Good	Fair	Yes	Good	2	None.
Cellar	Cement	Defective	Poor	Fair	Fair	No	Poor	3	Rubbish removed from factory.
Cellar	Cement	Sewer	Rough	Poor	Fair	No	Fair	1	Not yet reinspected.
Cellar	Cement	Sewer	Rough	Fair	Fair	No	Fair	3	Ceiling sheathed. New can racks.
Cellar	Cement	Sewer	Rough	Fair	Poor	No	Poor	2	None.
Separate building; bad surroundings	Cement	Sewer	Smooth	Very poor	Poor	Yes	Poor	2	More suitable pipes for conveying raw materials. Screens provided. Better methods in vogue.
Cellar	Cement	Sewer	Rough	Poor	Poor	No	Poor	1	Not yet reinspected.
Rear of store	Cement	Sewer	Rough	Fair	Fair	No	Fair	2	None.
Rear of store	Cement	Sewer	Rough	Poor	Poor	No	Fair	4	Walls lime-washed.
Detached building	Cement	Sewer	Smooth	Poor	Fair	No	Fair	1	New hot-water heater installed.
Cellar	Poor cement	Sewer	Rough	Fair	Poor	Yes	Poor	1	Not yet reinspected.
Cellar	Cement	Sewer	Rough	Poor	Fair	No	Fair	2	None.
Cellar	Cement	Sewer	Smooth	Fair	Fair	Yes	Fair	4	New hot water apparatus.
Cellar	Cement	Sewer	Rough	Poor	Fair	No	Fair	1	Not yet reinspected.
Cellar	Flagstone	Sewer	Smooth	Fair	Fair	Yes	Fair	3	None.
Rear of store	Cement	Sewer	Smooth	Fair	Fair	Yes	Good	2	None.
Rear of store	Cement	Sewer	Rough	Fair	Fair	Yes	Fair	3	Ceiling sheathed.
Cellar	Cement	Sewer	Rough	Poor	Fair	No	Fair	1	Not yet reinspected.
Cellar	Uneven cement	Sewer	Rough	Poor	Poor	No	Poor	3	None.
First floor of dwelling	Cement	Sewer	Rough	Poor	Poor	No	Poor	1	Not yet reinspected.
Cellar	Cement	Defective	Rough	Fair	Fair	No	Poor	2	None.
Cellar	Cement	Sewer	Smooth	Fair	Good	Yes	Good	2	Ceiling and walls painted white.
Cellar	Cement	Sewer	Rough	Fair	Good	Yes	Fair	1	Not yet reinspected.
Cellar	Cement	Sewer	Rough	Fair	Fair	No	Fair	4	New building under construction.
Open porch	Wood	On ground	Open air	Poor	Fair	No	Fair	2	New building contemplated.
Rear of store	Cement	Sewer	Rough	Good	Fair	No	Poor	2	None.
Cellar	Cement and brick	Sewer	Smooth	Fair	Clean	No	Good	2	Interior lime-washed. Screens provided. Rubbish removed.
Cellar	Cement	Sewer	Smooth	Fair	Fair	No	Poor	3	None.
Detached building	Cement and wood	Sewer	Rough	Fair	Fair	No	Poor	5	Interior cleansed and lime-washed. Rubbish removed.
Rear of drug store	Cement and wood	Sewer	Smooth	Fair	Poor	No	Poor	1	Not yet reinspected.
Rear of store	Earth	Sewer	Rough	Poor	Fair	Yes	Fair	3	None.
Cellar	Cement	Sewer	Rough	Poor	Poor	No	Poor	10	Ceiling part sheathed.
Cellar	Cement	Defective	Rough	Poor	Fair	Yes	Fair	4	None.
Cellar	Cement	Sewer	Rough	Poor	Fair	No	Fair	4	None.
Cellar	Cement	Sewer	Rough	Poor	Fair	Yes	Fair	5	None.
Adjoining kitchen	Wood	On ground	Rough	Fair	Fair	No	Fair	1	Not yet reinspected.
Boore ground; poor surroundings	Cement	Sewer	Smooth	Fair	Poor	Yes	Fair	1	Not yet reinspected.
Cellar	Wood	Under floor	Rough	Fair	Fair	Yes	Fair	1	Not yet reinspected.
Detached building	Cement	Sewer	Rough	Fair	Fair	No	Poor	2	Interior whitewashed. Screens provided. Better washing facilities.
Rear of laundry	Poor wood	On ground	Smooth	Poor	Fair	No	Fair	1	Not yet reinspected.
First floor of dwelling	Wood	Sewer	Rough	Good	Fair	No	Fair	1	New cement floor. New can racks. Smooth surfaces.
Cellar	Wood	Sewer	Rough	Fair	Poor	No	Poor	4	None.
Cellar	Cement	Sewer	Smooth	Fair	Fair	No	Good	3	Rusty cans removed. Can racks provided. Better methods.
Cellar	Cement	Sewer	Smooth	Fair	Fair	No	Good	4	Surfaces smoothed and cleaned. Can racks provided. Better methods.
Rear of store	Cement	Catch basin to sewer	Rough	Fair	Fair	No	Fair	5	Ceiling sheathed. Screens provided.
Cellar	Cement	Sewer	Rough	Fair	Poor	No	Poor	7	Factory partitioned. Ceiling made smooth. Lime-washed. Rusty cans and rubbish removed.
Back yard	Wood	Sewer	Rough	Fair	Poor	No	Poor	2	Better methods.

TABLE SHOWING THE GENERAL CONDITION OF ICE CREAM FACTORIES AND THE IMPROVEMENTS MADE DURING THE

EQUIPMENT AND METHODS OBSERVED ON FIRST INSPECTION.

TOWN.	PROPRIETOR.	Location.	Floor.	Drainage.	Interior Surfaces.	Washing Facilities.	Cleanliness of Utensils.	Proper Racks for Cans.	Me
Orange	J. E. Waterman.	Cellar	Cement	Sewer	Rough	Fair	Poor	No	Poor
Pailtode	Geo. Stabel	Cellar	Cement	Sewer	Rough	Poor	Fair	No	Poor
Passaic	Rose Avidon	Shed in rear of store.	Wood	Sewer	Rough	Poor	Poor	No	Poor
	Lieberman Bros.	Above ground; poor surroundings.	Wood	On ground	Rough	Poor	Poor	No	Poor
	National Ice Cream Co.	Detached building	Cement	Sewer	Smooth	New	Poor	No	Poor
	John Pappas.	Cellar	Cement	Sewer	Smooth	Poor	Poor	No	Poor
	Andrew Scerifio	Cellar	Cement	Sewer	Smooth	Poor	Poor	No	Poor
	Frank M. Deblino	Rear of store.	Wood	Catch basin to sewer	Smooth	Inadequate	Poor	Yes	Poor
	Harold Williams	Cellar	Cement	Catch basin	Rough	Fair	Good	No	Poor
	Biancho & Pappas.	Cellar	Cement	Sewer	Rough	Poor	Poor	No	Poor
	F. W. Bidhammer.	Cellar	Cement	Sewer	Rough	Poor	Fair	No	Poor
	Thos. Hinzler	Separate building	Flagstone	Defective	Rough	Poor	Poor	No	Poor
	J. V. Ernst.	Cellar	Cement	Sewer	Rough	Fair	Fair	Yes	Fair
	Henry Fochler	Cellar	Cement	Sewer	Rough	Fair	Fair	No	Fair
	Thos. Hinzler	Cellar	Cement	Sewer	Rough	Fair	Fair	No	Fair
	H. C. Hill Estate.	Rear of store.	Cement and wood.	Sewer	Smooth	Fair	Clean	No	Fair
	J. Hollinger	Cellar	Wood	Sewer	Rough	Fair	Good	No	Fair
	T. J. Hunter.	Cellar	Cement	Sewer	Smooth	Fair	Good	Yes	Good
	Wm. Kiattl	Cellar	Cement	Sewer	Smooth	Fair	Good	Yes	Good
	J. G. Rippenberg.	Detached building	Cement	Sewer	Smooth	Poor	Poor	No	Poor
	Microcellus Ice Cream Co.	Separate building	Cement	Sewer	Rough	Fair	Fair	Yes	Fair
	C. C. Moulton	Cellar	Cement	Sewer	Smooth	Fair	Fair	Yes	Fair
	Gustav Nadler	Above ground; poor surroundings.	Flag stone	Sewer	Rough	Fair	Fair	No	Poor
	Francis Confectionery Co.	Cellar	Broken cement	Sewer	Rough	Fair	Fair	Yes	Poor
	M. W. Frank	Rear of store.	Plag	Defective	Fair, shored	Poor	Poor	No	Poor
	Henry Schoenwe	Cellar	Cement	Sewer	Rough	Fair	Fair	Yes	Fair
	J. Seebach	Detached building	Cement	Sewer	Rough	Poor	Fair	Yes	Fair
	Henry Shlan	Cellar	Cement	Sewer	Smooth	Fair	Fair	No	Fair
	C. H. Stimpful.	Cellar	Cement	Sewer	Rough	Fair	Fair	No	Fair
	S. S. Swartz	First floor	Plag	Sewer	Rough	Fair	Fair	No	Poor
	Wm. Wieda	Cellar	Cement	Sewer	Smooth	Poor	Fair	Yes	Poor
	Chas. Zenters	Cellar	Cement	Sewer	Smooth	Fair	Good	Yes	Good
Perth Amboy	A. E. Aicher	Cellar	Cement	Sewer	Rough	Fair	Fair	Yes	Fair
	Barnekot & Pütz	Detached building	Loose wood	Sewer	Rough	Poor	Inadequate	Poor	Poor
	Hosion Confectionery Co.	Rear of store.	Cement	Sewer	Smooth	Fair	Fair	Yes	Poor
	Geo. Traolis	Cellar	Cement	Sewer	Rough	Fair	Fair	Yes	Fair
Plainfield	C. Vonpreckisen	Cellar	Cement	Sewer	Rough	Fair	Fair	Yes	Poor
	Heibel & Stas.	Rear of store.	Cement	Sewer	Rough	Fair	Fair	No	Fair
	Demoli & Co.	Rear of bakery.	Cement	Sewer	Rough	Fair	Inadequate	Fair	No
	C. H. Hall	Cellar	Cement	Cesspool	Rough	Fair	Fair	Yes	Fair
	Hubert Hanzel	Adding stable	Cement	Sewer	Rough	Fair	Fair	Yes	Fair
	P. B. Hoitze	Cellar	Cement	Sewer	None	None	Poor	No	Fair
	S. Lonti & Co.	Rear of store.	Wood	Defective	Rough	Fair	Fair	Yes	Fair
	A. C. Lehman	Cellar	Cement	Defective	Smooth	Fair	Fair	No	Fair
	W. S. Miller	Cellar	Cement	Cesspool	Rough	Poor	Poor	No	Poor
	E. R. Mills	Rear of store.	Cement	Sewer	Rough	Poor	Fair	No	Poor
	H. W. Hanzeloh.	Rear of store.	Cement	Sewer	Rough	Fair	Fair	No	Poor
	Hitz Co., Inc.	Cellar	Cement	Sewer	Smooth	Poor	Poor	No	Poor
	Schretiner Bros.	Cellar	Poor cement	Defective	Rough	Poor	Poor	No	Poor
	St. Stephen's Confectionery Co.	First floor	Poor wood	Defective	Smooth	Fair	Fair	No	Poor
	Gertrude Tier	Separate building	Wood	Sewer	Smooth	Fair	Fair	No	Fair
Point Pleasant	Robin Clark	Detached building	Wood	On ground	Rough	Improvement	Poor	Yes	Fair
	John Lang	Rear of store.	Cement and wood	Sewer	Rough	Fair	Fair	Yes	Fair
Princeton	E. B. Branch	Separate building	Cement	Catch basin to sewer	Rough	Rough	Inconvenient	Fair	No
	J. B. Ronnick	Rear of bakery.	Cement	Sewer	Rough	Poor	Clean	No	Fair
Rahway	Fred. C. Bauer	Cellar	Cement	Sewer	Rough	Fair	Fair	No	Fair
	Alex. Coular	Cellar	Wood	Defective	Rough	Fair	Fair	No	Fair
	Herman Herzer	Cellar	Wood	Sewer	Rough	Fair	Fair	No	Poor
	Sam'l H. Rubin.	Rear of store.	Cement	Defective	Rough	Poor	Poor	No	Poor
Raritan	J. Sebanb	Cellar	Cement	Defective	Rough	Poor	Fair	Yes	Fair
Red Bank	J. Garborina	Cellar	Brick	Defective	Rough	Poor	Fair	No	Poor
	Deer Hesse	Cellar	Cement	Sewer	Rough	Fair	Fair	No	Fair
	Miss E. Lang	Rear of store.	Cement	Sewer	Rough	Fair	Good	Yes	Fair
	Sugar Bowl Co.	Rear of store.	Cement and wood.	Sewer	Smooth	Inconvenient	Clean	Yes	Good
Ridgewood	Ernest Adick	Cellar	Cement	Sewer	Rough	Fair	Fair	No	Poor
	Mrs. Barbara Bolt.	Separate building	Cement	Sewer	Rough	Fair	Fair	No	Poor
	Jos. Corsilla	Cellar	Cement	Sewer	Rough	Fair	Fair	No	Poor
	P. A. Caines	Rear of store.	Wood	Sewer	Rough	Inconvenient	Fair	No	Fair
Roehling	Jos. Masary	Cellar	Wood	On ground	Rough	Fair	Fair	No	Fair
		Dirty back yard.	Cement	Open drain	Rough	Bad	Bad	No	Bad

EQUIPMENT AND METHODS OBSERVED ON FIRST INSPECTION.

Location.	Floor.	Drainage.	Interior Surfaces.	Washing Facilities.	Cleanliness of Utensils.	Proper Racks for Cans.	Methods.	No. of Inspections.	IMPROVEMENTS MADE DURING THE YEAR.
Cellar	Cement	Sewer	Rough	Fair	Poor	No	Poor	3	Walls and ceiling smoothed. Rusty cans discarded. Better washing facilities. Better methods.
Cellar	Cement	Sewer	Rough	Poor	Fair	No	Poor	1	Not yet reinspected.
Shed in rear of store	Wood	Sewer	Rough	Poor	Poor	No	Poor	1	None.
Above ground, poor surroundings	Wood	Sewer	Rough	Poor	Poor	No	Poor	1	Cement floor. City sewer connection. Walls made smooth.
Detached building	Cement	Sewer	Smooth	Poor	Poor	Yes	Poor	1	Better washing facilities.
Cellar	Cement	Sewer	Smooth	Poor	Poor	No	Poor	1	Better washing facilities.
Rear of store	Wood	Catch basin to sewer	Rough	Inadequate	Poor	Yes	Poor	1	None.
Cellar	Cement	Catch basin to sewer	Rough	Fair	Good	No	Poor	1	Method of handling product improved.
Cellar	Cement	Sewer	Rough	Poor	Poor	No	Poor	1	None.
Cellar	Cement	Sewer	Rough	Poor	Fair	No	Poor	1	Not yet reinspected.
Separate building	Flagstone	Sewer	Rough	Poor	Fair	Yes	Fair	1	None.
Cellar	Cement	Sewer	Rough	Fair	Fair	No	Fair	1	Steam boiler.
Cellar	Cement	Sewer	Rough	Fair	Fair	No	Fair	1	None.
Cellar	Cement and wood	Sewer	Smooth	Fair	Clean	No	Fair	1	Not yet reinspected.
Rear of store	Flagstone	Sewer	Rough	Good	Good	No	Fair	1	None.
Cellar	Cement	Sewer	Rough	Fair	Fair	No	Fair	1	Toilet removed. Method of disposing of garbage improved.
Cellar	Cement	Sewer	Smooth	Fair	Good	Yes	Fair	1	Not yet reinspected.
Cellar	Cement	Sewer	Rough	Poor	Poor	No	Poor	1	None.
Detached building	Cement	Sewer	Smooth	Poor	Fair	Yes	Fair	1	Not yet reinspected.
Separate building	Cement	Sewer	Smooth	Poor	Fair	Yes	Fair	1	Better washing facilities.
Cellar	Broken cement	Sewer	Rough	Fair	Fair	No	Poor	1	New building.
Above ground, poor surroundings	Poor wood	Defective	Part sheathed	Poor	Fair	Yes	Poor	1	Toilet removed from factory. Ceiling sheathed.
Cellar	Cement	Flag	Rough	Fair	Fair	Yes	Poor	1	None.
Rear of store	Cement	Sewer	Rough	Fair	Fair	Yes	Fair	1	Not yet reinspected.
Cellar	Cement	Sewer	Rough	Poor	Fair	Yes	Poor	1	None.
Cellar	Cement	Sewer	Rough	Poor	Fair	No	Fair	1	None.
Detached building	Cement	Sewer	Smooth	Poor	Fair	No	Fair	1	Not yet reinspected.
Cellar	Cement	Sewer	Rough	Poor	Fair	No	Poor	1	Not yet reinspected.
Cellar	Flag	Sewer	Rough	Poor	Fair	No	Poor	1	Not yet reinspected.
Cellar	Wood	Sewer	Smooth	Poor	Fair	Yes	Poor	1	Not yet reinspected.
Cellar	Cement	Sewer	Smooth	Poor	Good	Yes	Poor	1	Cement floor.
Cellar	Cement	Sewer	Rough	Fair	Good	No	Fair	1	Substrate.
Detached building	Loose wood	Defective	Rough	Inadequate	Poor	Yes	Poor	1	Not yet reinspected.
Rear of store	Wood	Sewer	Smooth	Fair	Yes	Yes	Poor	1	Cement floor. Improved washing facilities.
Cellar	Cement	Sewer	Rough	Fair	Fair	Yes	Fair	1	Not yet reinspected.
Bakery	Cement	Sewer	Smooth	Fair	Yes	No	Fair	1	Not yet reinspected.
Cellar	Cement	Sewer	Rough	Poor	Fair	Yes	Poor	1	Not yet reinspected.
Rear of store	Cement	Sewer	Rough	Inadequate	Fair	No	Poor	1	Not yet reinspected.
Rear of bakery	Cement	Sewer	Smooth	Fair	Fair	Yes	Fair	1	Ceiling sheathed. Improved washing facilities.
Cellar	Cement	Cesspool	Rough	Poor	Poor	No	Fair	2	Improved washing facilities. Screens provided.
Adjoining stable	Cement	Sewer	Rough	None	Poor	No	Poor	2	None.
Cellar	Cement	Sewer	Rough	Fair	Fair	Yes	Fair	1	Factory room partitioned. Ceiling sheathed. Interior painted.
Rear of store	Cement	Defective	Smooth	Fair	Smooth	No	Fair	1	Sewer connection.
Cellar	Cement	Cesspool	Rough	Poor	Poor	No	Poor	1	Sewer connection. Can racks provided.
Cellar	Cement	Defective	Rough	Poor	Fair	No	Poor	3	Factory being remodeled.
Rear of store	Cement	Rough	Rough	Poor	Fair	No	Fair	2	Ceiling sheathed. Interior lime-washed. Screens. Improved washing facilities.
Rear of store	Cement	Sewer	Smooth	Poor	Poor	No	Fair	2	Interior surfaces cleaned and painted. Cleaner utensils.
Cellar	Cement	Sewer	Rough	Poor	Poor	No	Poor	3	New equipment being installed.
Cellar	Poor cement	Defective	Rough	Poor	Fair	No	Fair	2	Ceiling sheathed. Interior lime-washed. Floor repaired. Better drainage. Methods improved.
First floor	Poor wood	Defective	Smooth	Fair	Fair	No	Fair	2	Screens installed.
Separate building	Wood	On ground	Rough	Inconvenient	Poor	No	Fair	4	Can racks provided.
Detached building	Wood	Catch basin to sewer	Rough	Poor	Fair	Yes	Fair	1	Not yet reinspected.
Rear of store	Cement and wood	Catch basin to sewer	Rough	Inconvenient	Fair	No	Fair	1	Not yet reinspected.
Separate building	Cement	Sewer	Rough	Poor	Poor	No	Fair	1	Not yet reinspected.
Rear of bakery	Cement	Sewer	Rough	Fair	Fair	No	Fair	1	Not yet reinspected.
Cellar	Cement	Sewer	Rough	Fair	Fair	No	Fair	1	Not yet reinspected.
Cellar	Wood	Defective	Rough	Fair	Fair	No	Poor	1	Not yet reinspected.
Rear of store	Cement	Sewer	Rough	Poor	Poor	No	Poor	1	Not yet reinspected.
Cellar	Wood	Defective	Rough	Poor	Fair	Yes	Fair	1	Not yet reinspected.
Cellar	Brick	Defective	Rough	Poor	Fair	No	Fair	1	Not yet reinspected.
Cellar	Cement	Sewer	Rough	Fair	Fair	No	Fair	1	Not yet reinspected.
Rear of store	Cement	Sewer	Smooth	Good	Good	Yes	Fair	2	Ceiling sheathed. Screens provided.
Rear of store	Cement and wood	Sewer	Rough	Inconvenient	Poor	No	Poor	1	Not yet reinspected.
Cellar	Cement	Sewer	Rough	Poor	Fair	No	Poor	1	Not yet reinspected.
Separate building	Cement	Sewer	Rough	Fair	Fair	No	Poor	1	Not yet reinspected.
Cellar	Cement	Sewer	Rough	Fair	Fair	No	Fair	1	Not yet reinspected.
Cellar	Cement	On ground	Rough	Inconvenient	Fair	No	Fair	1	Not yet reinspected.
Rear of store	Wood	Open drain	Rough	Fair	Fair	No	Fair	1	Not yet reinspected.
Dirty back yard	Cement	Open drain	Rough	Bad	Bad	No	Bad	1	Notified to stop manufacturing.

TABLE SHOWING THE GENERAL CONDITION OF ICE CREAM FACTORIES AND THE IMPROVEMENTS MADE DURING THE YEAR

TOWN.	PROPRIETOR.	Location.	Floor.	Drainage.	Interior Surfaces.	Washing		Cleanliness of Utensils.	Proper	
						Facilities.	Facilities.		Racks for	Cans.
Rutherford	O. W. Nadler	Cellar	Cement	Defective	Rough	Fair	Fair	Fair	No	Fair
Salem	C. Van Der Horst	Separate building	Cement	Sewer	Rough	Inadequate	Fair	Fair	Yes	Fair
Somerville	John W. Dumas	Rear of store	Cement	Sewer	Rough	Fair	Poor	Fair	No	Fair
"	Siemsen & Rosenberg	Cellar	Brick and flag	Sewer	Rough	Inconvenient	Fair	Fair	No	Fair
"	T. J. Foler	Cellar	Cement	Defective	Smooth	Fair	Fair	Fair	No	Fair
South Orange	Pyron Kilburg	Cellar	Cement	Sewer	Rough	Inconvenient	Fair	Fair	No	Fair
Summit	Agnes Camera	Cellar	Cement	Defective	Rough	Fair	Fair	Fair	Yes	Fair
"	K. Kanzak	Cellar	Cement	Defective	Rough	Fair	Fair	Fair	No	Fair
Tenafly	Chas. Rivet	Cellar	Cement	Defective	Rough	Fair	Poor	Fair	No	Poor
Trenton	Detached building	Brick	Cement	Defective	Rough	Inconvenient	Fair	Fair	No	Fair
"	Wm. Alfathser	Rear of store	Brick	Cement	Smooth	Fair	Fair	Fair	Yes	Good
"	Jos. Bonfeld	In dwelling	Wood	Defective	Smooth	Poor	Poor	Fair	No	Poor
"	Arsenid Episcopo	Rear of store	Wood	Defective	Smooth	Poor	Poor	Fair	No	Poor
"	Frank Chousatz	Rear of store	Wood	Defective	Smooth	Poor	Poor	Fair	No	Poor
"	Theo. Klonowatz	Cellar	Cement	Defective	Rough	Poor	Poor	Fair	No	Poor
"	Joseph Episcopo	In dwelling	Wood	Defective	Rough	Inconvenient	Fair	Fair	No	Poor
"	H. D. Goodenough	Cellar	Cement	Catch basin	Rough	Inconvenient	Good	Fair	No	Fair
"	Hilberrecht Catering Co.	Detached building	Cement	Sewer and catch basin	Smooth	Fair	Fair	Fair	Yes	Fair
"	Max Keller	First floor	Cement	Sewer	Smooth	Fair	Fair	Fair	No	Fair
"	A. & S. Loukapoulos	Cellar	Cement	Sewer	Rough	Poor	Fair	Fair	No	Poor
"	Gregorias Loukapoulos	Adjoining stable	Cement and wood	Sewer	Rough	Poor	Poor	Fair	No	Poor
"	Manning & Beink	Detached building	Brick and cement	Sewer	Rough	Good	Good	Fair	Yes	Good
"	John Newman	Cellar	Cement	Defective	Rough	Inconvenient	Fair	Fair	No	Fair
"	Salvator Palomo	Shed	Poor wood	On ground	Rough	Hard	Poor	Fair	No	Poor
"	Paris Confection Co.	Cellar	Cement	Defective	Rough	Fair	Poor	Fair	No	Poor
"	Petrelly Bros.	Cellar	Cement	Rough	Rough	Inconvenient	Poor	Fair	No	Poor
"	W. B. Riker & Son	Cellar	Cement	Catch basin to sewer	Smooth	Fair	Good	Fair	Yes	Good
"	Shes	Shed	Cement	Sewer	Rough	Good	Inconvenient	Fair	Yes	Fair
"	Chas. W. Seemidt	Adjoining milk room	Broken cement	Sewer	Rough	Good	Fair	Fair	Yes	Fair
"	Alvab Smith	Detached building	Brick and cement	Sewer	Rough	Fair	Fair	Fair	Yes	Fair
"	John Sillano	Cellar	Wood	Defective	Rough	Poor	Fair	Fair	No	Poor
"	Jno. Stratigopoulos	In dwelling	Cement	Sewer	Rough	Poor	Fair	Fair	Yes	Poor
"	Chas. Swartz	Cellar	Wood	Sink above sewer level	Rough	Good	Good	Fair	Yes	Good
"	Sugar Bowl Co.	Cellar	Cement	Rough	Rough	Poor	Fair	Fair	No	Poor
"	W. Scott Tactor	Cellar	Cement	Catch basin	Rough	Fair	Fair	Fair	Yes	Fair
"	Basement	Brick and cement	Cement	Sewer	Rough	Inconvenient	Fair	Fair	No	Poor
"	A. Wbeling	Rear of store	Sewer	Rough	Rough	Inconvenient	Fair	Fair	Yes	Fair
Union Hill	J. H. Dunscker	Cellar	Cement	Sewer	Smooth	Inconvenient	Fair	Fair	No	Fair
"	Chris Gahlen	Cellar	Cement	Sewer	Rough	Inconvenient	Fair	Fair	No	Fair
"	H. Glan Dorf	Cellar	Cement	Sewer	Rough	Inconvenient	Fair	Fair	No	Fair
"	W. C. Gladford	Separate building	Cement	Sewer	Smooth	Inconvenient	Fair	Fair	Yes	Fair
"	Hannet Bros.	Adjoining stable	Cement	Sewer	Rough	Good	Fair	Fair	Yes	Fair
"	Mrs. H. Horner	Cellar	Cement	Sewer	Rough	Poor	Fair	Fair	Yes	Poor
"	Nich. Jensen	Cellar	Cement	Sewer	Smooth	Poor	Fair	Fair	No	Fair
"	Chas. Keller	Cellar	Cement	Sewer	Rough	Fair	Fair	Fair	No	Fair
"	Mrs. J. Minderman	Cellar	Cement	Sewer	Smooth	Inadequate	Fair	Fair	No	Fair
"	J. Strinbecker	Cellar	Cement	Sewer	Smooth	Good	Fair	Fair	Yes	Fair
Washington	John W. Gaden	Separate building	Cement	Sewer	Smooth	Good	Fair	Fair	Yes	Fair
"	J. Karles & Bro.	Cellar	Poor wood	Defective	Rough	Poor	Fair	Fair	Yes	Fair
West Hoken	Geo. R. Veltien	Detached building	Cement	Trapped drain	Rough	Good	Poor	Fair	No	Fair
"	Alexander Bros.	Adjoining stable	Cement	Defective	Rough	Inconvenient	Poor	Fair	Yes	Fair
"	Wm. Elomb	Cellar	Cement	Sewer	Rough	Fair	Fair	Fair	Yes	Fair
"	Wm. Helms	Cellar	Cement	Sewer	Smooth	Fair	Fair	Fair	No	Poor
"	Wm. Heil	Cellar	Cement	Sewer	Rough	Inconvenient	Fair	Fair	Yes	Fair
"	Chas. Matham	Cellar	Cement	Sewer	Smooth	Good	Fair	Fair	Yes	Fair
"	Chris. Schult	Cellar	Cement	Sewer	Smooth	Poor	Fair	Fair	Yes	Fair
West New York	H. Vanoverbeke	Cellar	Cement	Sewer	Rough	Poor	Fair	Fair	Yes	Fair
"	Albert Mecklesch	Cellar	Cement	Sewer	Rough	Poor	Fair	Fair	Yes	Fair
"	Henry Schmidt	Cellar	Cement	Sewer	Rough	Poor	Fair	Fair	No	Fair
"	Henry Thompson	Cellar	Cement	Sewer	Rough	Poor	Fair	Fair	Yes	Fair
Wildwood	B. F. Miller	Rear of store	Cement	Sewer	Smooth	Poor	Fair	Fair	Yes	Fair
"	H. L. Ogde	Detached building	Cement and wood	Sewer	Rough	Good	Fair	Fair	Yes	Poor
"	Mills Seibert	Rear of store	Cement	Sewer	Rough	Poor	Fair	Fair	Yes	Fair
Woolburg	G. W. Schenckant, Jr.	Detached building	Cement	Sewer	Smooth	Fair	Fair	Fair	Yes	Fair
"	John Urban	Rear of store	Cement	Defective	Smooth	Fair	Fair	Fair	Yes	Fair

TABLE SHOWING THE GENERAL CONDITION OF ICE CREAM FACTORIES AND THE IMPROVEMENTS MADE DURING THE YEAR - *Continued.*

EQUIPMENT AND METHODS OBSERVED ON FIRST INSPECTION.

Location.	Floor.	Drainage.	Interior Surfaces.	Washing Facilities.	Cleanliness of Utensils.	Proper Racks for Cans.	Methods.	No. of Inspections.	IMPROVEMENTS MADE DURING THE YEAR.
Cellar	Cement	Defective	Rough	Fair	Fair	No	Fair	1	Not yet reinspected.
Separate building	Cement	Sewer	Rough	Inadequate	Fair	Yes	Fair	3	Ceiling abated. Improved washing facilities.
Rear of dwelling	Cement	Sewer	Rough	Fair	Poor	No	Fair	3	Ceiling abated.
Rear of store	Cement	Fair	Rough	Fair	Fair	Yes	Fair	3	None.
Cellar	Brick and bag.	Sewer	Rough	Inconvenient	Fair	No	Fair	1	Not yet reinspected.
Rear of store	Wood	Defective	Smooth	Fair	Fair	No	Fair	1	Not yet reinspected.
Cellar	Cement	Fair	Rough	Fair	Poor	No	Fair	1	Better methods.
Cellar	Cement	Sewer	Rough	Inconvenient	Fair	No	Fair	1	Ceiling abated. Interior lime-washed.
Cellar	Cement	Defective	Rough	Fair	Fair	Yes	Fair	1	Not yet reinspected.
Cellar	Cement	Rough	Rough	Fair	Poor	No	Fair	1	Not yet reinspected.
Cellar	Cement	Defective	Rough	Fair	Poor	No	Fair	1	None.
Detached building	Cement	Defective	Rough	Inconvenient	Fair	No	Fair	2	None.
Rear of store	Brick	Sewer	Rough	Fair	Clean	Yes	Good	1	Not yet reinspected.
In dwelling	Wood	Defective	Smooth	Poor	Poor	No	Poor	1	None.
Rear of store	Wood	Defective	Smooth	Poor	Poor	No	Poor	3	Interior lime-washed.
Rear of store	Wood	Defective	Smooth	Poor	Poor	No	Poor	3	New building and equipment.
Cellar	Cement	Defective	Rough	Fair	Fair	No	Poor	2	Notified to stop manufacturing.
Shed	Wood	Defective	Rough	Inconvenient	Fair	No	Poor	2	None.
In dwelling	Wood	Defective	Smooth	Inconvenient	Fair	No	Fair	2	None.
Detached building	Cement	Sewer	Part smooth	Good	Fair	Yes	Fair	1	Not yet reinspected.
First floor and basement	Cement	Sewer and catch basin.	Smooth	Fair	Fair	Yes	Fair	1	Not yet reinspected.
First floor	Cement	Sewer	Smooth	Fair	Fair	No	Fair	1	Not yet reinspected.
Cellar	Cement	Sewer	Rough	Fair	Poor	No	Fair	1	Not yet reinspected.
Adjoining stable	Cement and wood.	Catch basin to sewer	Rough	Poor	Poor	No	Poor	3	Factory partitioned. Ceiling abated. New ventilators.
Detached building	Brick and cement	Sewer	Rough	Good	Good	Yes	Good	3	None.
Cellar	Brick	Fair	Rough	Inconvenient	Fair	No	Fair	3	Not yet reinspected.
Cellar	Cement	Sewer	Smooth	Fair	Clean	No	Good	3	New factory and equipment above ground.
Shed	Poor wood	On ground	Rough	Bad	No	No	Poor	3	None.
Cellar	Cement	Defective	Rough	Poor	No	No	Poor	1	Not yet reinspected.
Cellar	Cement	Sewer	Rough	Inconvenient	Poor	No	Poor	1	None.
Cellar	Cement	Sewer	Rough	Inconvenient	Poor	No	Poor	1	Not yet reinspected.
Cellar	Cement	Catch basin to sewer	Smooth	Fair	Good	Yes	Good	1	Not yet reinspected.
Shed	Cement	Sewer	Rough	Inconvenient	Fair	Yes	Fair	1	Not yet reinspected.
Adjoining milk room	Broken cement	Defective	Rough	Inconvenient	Fair	No	Fair	1	Not yet reinspected.
Detached building	Brick and cement	Sewer	Rough	Fair	Fair	Yes	Fair	1	New factory in course of erection.
Cellar	Wood	Defective	Rough	Poor	Fair	No	Poor	3	None.
In dwelling	Cement	Fair	Rough	Poor	Fair	No	Poor	1	Cement floor. Sewer connection. Better washing facilities. Better ventilation. Walls smoothed. Lime-washed.
Cellar	Wood	Sink above sewer level.	Rough	Good	Good	Yes	Good	1	Not yet reinspected.
Cellar	Cement	Defective	Rough	Poor	Poor	No	Poor	1	Not yet reinspected.
Cellar	Cement	Catch basin	Rough	Fair	Fair	Yes	Fair	1	Not yet reinspected.
Basement	Brick and cement.	Sewer	Rough	Inconvenient	Fair	No	Poor	1	Not yet reinspected.
Rear of store	Flagstone	Sewer	Smooth	Inconvenient	Fair	No	Fair	1	Not yet reinspected.
Cellar	Cement	Sewer	Smooth	Inconvenient	Fair	No	Fair	1	None.
Cellar	Cement	Sewer	Rough	Inconvenient	Fair	No	Fair	1	None.
Cellar	Cement	Sewer	Rough	Fair	Fair	Yes	Fair	3	Ceiling and walls smoothed and cleaned.
Separate building	Cement	Sewer	Smooth	Fair	Inconvenient	Fair	Fair	3	None.
Adjoining store	Cement	Sewer	Rough	Poor	Poor	Yes	Poor	3	Ceiling made smooth and clean.
Cellar	Cement	Sewer	Rough	Poor	Fair	Yes	Fair	3	Ceiling abated.
Cellar	Cement	Sewer	Smooth	Fair	Fair	No	Fair	3	Can racks provided.
Cellar	Cement	Sewer	Rough	Fair	Fair	No	Fair	3	Ceiling abated. Can racks provided.
Cellar	Cement	Sewer	Smooth	Inadequate	Fair	Yes	Fair	3	None.
Cellar	Cement	Sewer	Smooth	Smooth	Good	Yes	Fair	3	None.
Separate building	Cement	Sewer	Rough	Fair	Fair	Yes	Fair	3	None.
Cellar	Poor wood	Defective	Rough	Poor	Bad	No	Poor	1	Not yet reinspected.
Detached building	Cement	Trapped drain	Rough	Good	Poor	No	Fair	1	New building and equipment.
Adjoining stable	Cement	Defective	Rough	Inconvenient	Poor	Yes	Poor	3	Not yet reinspected.
Cellar	Cement	Sewer	Rough	Fair	Fair	Yes	Fair	3	None.
Cellar	Cement	Sewer	Smooth	Fair	Fair	Yes	Fair	3	Can racks provided. Cleaner utensils. Methods improved.
Cellar	Cement	Sewer	Rough	Fair	Fair	Yes	Fair	3	Interior lime-washed. Screens provided. Improved washing facilities.
Cellar	Cement	Sewer	Smooth	Clean	Fair	Yes	Good	3	None.
Cellar	Cement	Sewer	Smooth	Poor	Fair	Yes	Fair	3	Obstructions removed so as to afford better light and ventilation.
Cellar	Cement	Sewer	Rough	Poor	Fair	Yes	Fair	3	None.
Cellar	Cement	Sewer	Rough	Poor	Poor	No	Poor	3	Ceiling abated. Cleaner utensils and methods.
Cellar	Cement	Sewer	Rough	Poor	Fair	No	Fair	3	Ceiling abated. Can racks provided.
Cellar	Cement	Sewer	Smooth	Fair	Fair	Yes	Fair	1	None.
Rear of store	Cement	Sewer	Rough	Fair	Poor	Yes	Poor	1	Not yet reinspected.
Detached building	Cement and wood.	Sewer	Rough	Good	Fair	Yes	Fair	3	Toilet enclosed.
Rear of store	Cement	Sewer	Rough	Poor	Poor	Yes	Fair	1	Not yet reinspected.
Detached building	Cement	Sewer	Smooth	Fair	Poor	No	Fair	1	Not yet reinspected.
Rear of store	Cement	Defective	Smooth	Fair	Fair	Yes	Fair	1	Not yet reinspected.

Report on the State Laboratory of Hygiene.

R. B. FITZ-RANDOLPH, *Director.*

To the Board of Health of the State of New Jersey:

GENTLEMEN—I have the honor to submit the following report on the operation of the Laboratory of Hygiene for the year ending October 31st, 1911.

The present report deals only with that portion of the laboratory work relating to the examination of specimens from suspected cases of communicable diseases which are sent by physicians throughout the State, and such other bacteriological work as is done at the request of other divisions of the Board.

That portion of the laboratory work relating to the examination of food and drugs is described in the report of the Chief of the Division of Food and Drugs, and the laboratory examination of water and sewage is outlined in the report of the Chief of the Division of Sewerage and Water Supplies.

Ever since the laboratory was moved to its present quarters in the State House it has been handicapped because of the lack of proper office room. The office is also occupied by the clerical force of the Division of Food and Drugs, and the number of employes in that division has increased to such an extent that the office space had become entirely inadequate. During the past year an extension has been constructed adjoining the present laboratory, which provides a satisfactory office, a store and work room, and a small but well equipped animal room. The fact that we are at last able to keep animals for experimental purposes under proper conditions, is a source of much gratification. Heretofore, only a very limited number of animals could be kept, and they had to be housed in cages placed on the floor of the food laboratory, where they were very much in the way. The present

animal room will accommodate comfortably about fifty guinea pigs, which is probably more than we will need to keep at one time for some years to come, unless much more work necessitating the use of animals is done than is now contemplated. It is also provided with an incinerator for disposing of infectious material. From now on we will be able to comply with requests from veterinarians for the examination of specimens from suspected cases of glanders, and we will also be able to make virulence tests on diphtheria cultures whenever requested to do so by physicians.

The bacteriological work of the laboratory is limited to such investigations as relate in some way to the public health. A discussion of the reason for such limitations will be found in the report of the laboratory for 1910. Because of these limitations, and because of the smallness of our working force, the operations of the laboratory have been confined almost exclusively as in years past, to the routine examination of specimens from suspected cases of diphtheria, tuberculosis, typhoid fever, malaria, gonorrhoea, rabies, anthrax and glanders. Besides these routine examinations, considerable work has been done in the examination of specimens of faeces and urine from suspected carriers of typhoid fever, and from persons recovering from this disease, in order to determine when they cease to be infectious. These examinations were made to aid the work of the Division of Medical and Sanitary Inspection in their efforts to control the spread of typhoid fever. Unfortunately, such investigations consume considerable time, and because of the ever increasing amount of routine work, we were unable to assist this division as frequently as it would have been desirable to do.

The time has come when the work of the laboratory should be broadened. If we had sufficient force, we could render valuable aid to the Division of Medical and Sanitary Inspection, by making bacteriological examinations of various kinds, which would be of much use to them in their epidemiological investigations. It is therefore recommended that a sufficient addition to our annual appropriation be asked for, to secure the services of an additional bacteriologist. The routine work has grown so burdensome, and, because of press of other duties, the director is able to devote so little of his time to it, that our bacteriologist usually has more than he can attend to with the routine alone, and is utterly unable

to undertake many investigations which come within the legitimate scope of our work.

Fortunately, the State has been unusually free from serious epidemics of diphtheria during the year, and we were therefore spared the necessity of examining large numbers of specimens for the bacillus which causes this disease. The number of specimens of diphtheria examined, as shown in table A, which follows, is much smaller than has been the case for three years past. This is due entirely to the absence of extensive epidemics. When such epidemics occur it is the practise to send large numbers of specimens from well persons to the laboratory, in the hope that the carriers, by whom the disease is usually spread, may be detected, but unless a considerable number of cases appears at one time in a locality, local officials do not, as a rule, take this precaution.

The following table shows the number and kind of specimens examined each year since the laboratory was founded:

TABLE A.—SHOWING THE NUMBER OF SPECIMENS OF EACH KIND EXAMINED SINCE THE LABORATORY WAS ORGANIZED.

	1886 and 1887	1888	1889	1900	1901	1902	1903	1904
Diphtheria.....	627	600	577	974	1,864	1,487	2,000	2,949
Tuberculosis.....	258	516	766	892	1,211	1,467	1,853	2,814
Typhoid fever.....	27	175	330	431	739	884	1,333	1,272
Malaria.....		4	*	55	113	196	151	98
Miscellaneous.....	7	15	*	30	28	55	132	67
Totals.....	914	1,313	1,682	2,380	3,955	4,080	5,559	6,780

	1905	1906	1907	1908	1909	1910	1911
Diphtheria.....	2,896	3,277	3,348	6,090	14,688	8,284	4,529
Tuberculosis.....	2,691	2,948	2,402	3,637	4,208	4,520	4,938
Typhoid fever.....	1,253	1,556	1,976	2,543	2,261	3,028	3,342
Malaria.....	109	126	149	153	197	244	320
Miscellaneous.....	81	126	119	170	240	386	589
Totals.....	7,048	8,033	8,993	12,618	21,594	16,424	13,718

*The number of these specimens has not been recorded.

An examination of this table shows a steady increase in the number of specimens of all kinds examined, with the exception of diphtheria, and, as has already been explained, the number of diphtheria specimens fluctuates widely from year to year, depending upon the prevalence and distribution of the disease

throughout the State, and especially in the State institutions. The number of specimens examined for tuberculosis, typhoid fever, and malaria, shows their normal increase, and the increase in the number of miscellaneous specimens is especially large.

Table B shows the number and kind of specimens examined, which have been classified as miscellaneous.

TABLE B—SHOWING THE NUMBER AND VARIOUS KINDS OF MISCELLANEOUS SPECIMENS EXAMINED DURING THE YEAR.

	Positive.	Negative.	Total.
Gonorrhoea	170	258	428
Rabies	40	26	66
B. paratyphosus	3	37	40
B. typhosus, urine .....	...	11	11
B. typhosus, faeces .....	...	11½	11
B. typhosus, water .....	...	3	3
B. tuberculosis, urine	2	7	9
B. tuberculosis, faeces .....	...	1	1
B. tuberculosis, meat	1	1	2
B. tuberculosis, spinal fluid ..	...	1	1
B. tuberculosis, ascitic fluid ..	...	1	1
B. tuberculosis, blood .....	...	1	1
Staphylococcus, pus	3	...	3
Streptococcus, pus .....	...	2	2
Glanders	2	5	7
Treponema pallidum .....	...	2	2
Hog cholera .....	...	1	1
Totals	221	368	589

Two things are especially significant about this table. The number of gonorrhoea specimens examined this year was 428 as against 293 for 1910, an increase of 46 per cent., and the number of specimens examined for rabies was 66, an increase over last year of 53 per cent. It is very gratifying to note that physicians are beginning to make more use of the laboratory in their efforts to control the spread of gonorrhoea, which is a dangerous disease. It is to be regretted that many more specimens of this character are not examined, as the laboratory can render important aid to the physician in confirming or disproving his diagnosis.

Attention was directed in last year's report to the rapid increase in the number of cases of rabies in this State. The number of specimens received this year shows that this increase still continues, and it is likely to continue until some efficient and con-

certed action is taken by local authorities to limit its spread. Forty specimens were examined, most of them being dogs, in which a positive result was obtained. This number, however, represents but a small fraction of the cases which actually occur. Animals suspected of having rabies are frequently sent for examination to New York or Philadelphia, or to pathologists within the State, instead of to this laboratory, and examinations of such animals are not usually made at all unless they have bitten either a human being or some valuable domestic animal. Rabies is a preventable disease, and the methods for restricting it are thoroughly understood, and it increases only because our local authorities are either too indolent to impose proper restrictions on the owners of dogs, or too timid to insist on these restrictions in the face of the opposition which is certain to arise.

It is necessary to again call attention to the importance of proper collection of specimens to be examined for rabies, and their proper transmissal to the laboratory. If the suspected animal is a dog and is still alive, it should *not be killed*, but should be securely confined and kept under observation by a competent veterinarian. An animal showing symptoms of rabies will die within a few days, and an earlier diagnosis can usually be made in this manner, than by killing the animal and sending the head to the laboratory.

If the animal has died or been killed, the head should be carefully removed, packed in a *tight* container, which should be surrounded by ice and shipped by prepaid express to the laboratory without delay. In the examination of animals in which putrefaction has progressed to such an extent as to destroy the integrity of the brain tissue, it is usually necessary to resort to animal inoculation, as microscopical examination of such material does not yield reliable results, and, in that case, a period of from two to six or eight weeks may elapse before it is possible to report the result of the examination. It frequently happens also that animals inoculated with decomposed brain tissue, die of septicaemia before symptoms of rabies have time to develop, and in such cases no satisfactory report can be made.

The following table shows the number and kind of specimens examined during the year, arranged by months:

TABLE C.—SHOWING THE NUMBER OF SPECIMENS EXAMINED DURING THE YEAR, ARRANGED BY MONTHS.

MONTHS.	DIPH-THERIA.		TUBERCU-LOSIS.		TYPHOID FEVER.		MALARIA.		MISCELLA-NEOUS.		Totals.
	Primary.	Secondary.	Primary.	Secondary.	Primary.	Secondary.	Primary.	Secondary.	Primary.	Secondary.	
December, ".....	362	160	278	46	167	20	16		37	5	1,091
January, 1910.....	338	101	392	45	172	17	13		39	6	1,123
February, ".....	280	107	379	67	163	17	9		41	2	1,085
March, ".....	315	102	480	77	186	29	17	2	26	6	1,233
April, ".....	249	106	419	60	175	20	20		36	4	1,063
May, ".....	192	89	454	53	198	22	37	1	42	5	976
June, ".....	167	35	342	36	174	21	27	1	31	5	902
July, ".....	143	40	298	42	255	23	31	1	38	5	876
August, ".....	118	57	309	43	486	86	45	3	61	5	1,213
September, ".....	123	48	311	33	474	98	46	1	66	13	1,224
October, ".....	435	135	353	66	271	38	26		57	3	1,434
Totals.....	2,167	1,362	4,326	612	2,934	406	311	9	525	64	13,718
Grand totals.....	4,529		4,938		3,342		320		589		

This table shows the seasonal variation in diphtheria and typhoid fever very clearly, and the absence of any marked variation in the case of tuberculosis.

Table D shows the number and kind of specimens examined, arranged by cities and towns.

TABLE D.—SHOWING THE NUMBER OF SPECIMENS EXAMINED DURING THE YEAR, ARRANGED BY CITIES AND TOWNS.

TOWNS.	DIPH-THERIA.		TUBERCU-LOSIS.		TYPHOID FEVER.		MALARIA.		MISCELLA-NEOUS.		Totals.
	Primary.	Secondary.	Primary.	Secondary.	Primary.	Secondary.	Primary.	Secondary.	Primary.	Secondary.	
Allendale.....			2								2
Allentown.....	1										1
Alloway.....			1	1							2
Alpha.....	5										5
Andover.....	5	10									15
Anglessa.....			2		46	8	10	1	12	12	105
Arlington.....	13	2			7	3					14
Asbury.....		1			2		61	3	11	1	73
Asbury Park.....	424	158			60	5					587
Atooo.....					2						2
Atlantic City.....	67	16			77	6	50	5	3		122
Atlantic Highlands.....	1				2						3
Audubon.....	13	3			2						16
Barnegat.....					5	1					6
Basking Ridge.....	7	24			1						31
Bayhead.....					1						1
Bayonne.....	19	4			63	3	34	1	8		119
Beach Haven.....			2		2						4
Bedminster.....	2						1				3
Belford.....					7						7
Bellville.....			2		2		6	2	1		11
Belmar.....			4		4	2					10
Belvidere.....	2	1									3
Bergenfield.....					3						3
Berlin.....					3		13				16
Bernardsville.....	19	5			8		7	1	4	2	28
Beverly.....			2		2		4	1	2		9
Blackwood.....	4	2			2						6
Blairstown.....	2	1			2						5
Bloomfield.....	2	1			2	4	15		2	3	22
Bloomsbury.....					2						2
Bogota.....					11	3	6		4	1	25
Boonton.....	15	2			11	2	5				25
Bordentown.....	43	24			3	1	5	1			74
Bound Brook.....	5	1			3	1					9
Bradley Beach.....	1				3						4
Bridgeport.....	4				26	4	6	2			36
Burlington.....	8	2			22	4	10	3			43
Butler.....	2	1			4	1			6		13
Caldwell.....	10				8	1	14				22
Callon.....	83	32			197	21	134	16	1	22	354
Camden.....	3				4	2	4	1		6	16
Cape May.....					2		4				6
Cape May Court House.....					1		4	1	2		7
Carlstadt.....	6				13	1	4				21
Cedarville.....	1				1						2
Chatham.....	1				5						6
Chatsworth.....											1
Chester.....			2		2	3					5
Chesterfield.....	3				3						6
Clayton.....	1				4	1	13	1			19
Clifton.....	21	2			4	1	10		4	4	26
Clinton.....					1	2	1				3
Closter.....	4				3		7				11
Collingswood.....	15	6			7		2		4	2	24
Columbus.....					1			1			2
Cranbury.....	3	1			1						5
Cranford.....	85	19			27		9				111
Crosswicks.....	3	3									6
Daretown.....					1						1
Dayton.....					1	1					2

TABLE D.—SHOWING THE NUMBER OF SPECIMENS EXAMINED DURING THE YEAR, ARRANGED BY CITIES AND TOWNS—Continued.

TOWNS.	DIPH- THERIA.		TUBER- CULOSIS.		TYPHOID FEVER.		MALARIA.		MISCEL- LANEOUS.		Totals.
	Primary.	Secondary.	Primary.	Secondary.	Primary.	Secondary.	Primary.	Secondary.	Primary.	Secondary.	
Deerfield			1								1
Delanco				1							1
Dennsville				1							1
Dover		1	3		1				1		11
Dumont	4	12			2				2		12
Dunellen	3	15	12		7				1		42
East Millstone							4				4
East Newark			2								2
East Orange	1	1	2	17	22	2			3	1	132
East Rutherford	4	1	18	1	1	2			3	1	27
Easton town	1										1
Egg Harbor	2	2	6		4				1		15
Elizabeth	22	74	136	38	87	6			3		629
Elmer	1	5			1	3			9		12
Englewood	26	18	22	4	12	3			2		17
Englishtown	3	5			1	1					11
Fairton			3	1							3
Fairhaven			5								3
Fanwood	6	3	3	1	1						16
Far Hills			1								1
Farmingdale	3	3	1	1	2						11
Flanders											3
Flemington	2	5	3		2						17
Florence	2		5		7	3			3		20
Fort Lee			7	5							12
Franklin Furnace	1				1	1					3
Franklin Park					1						1
Freehold	3	6	13	1	16	2	2		4	1	48
Frenchtown		6	2		1						3
Garfield			14	1	1						16
Georgetown	12	6							2		36
German Valley	16	13	5		1						39
Gillette	2		3	1	1				3		19
Gladstone	17	16	2		12						45
Glassboro			3	1	2				1		5
Glen Gardner			1								1
Glen Ridge			3		1				3		7
Gloucester	5	3	12		1						20
Grantwood	9	12	7		2		1		1		32
Greenwich											2
Greystone Park					4	1					5
Guttenberg	4	7									11
Hackensack	41	35	44	6	56	11	5		2		200
Hackettstown	2	3	14	2	3						12
Haddonfield	2	8			11	3			8		23
Haddon Heights	1		1								70
Hainesport	6	1									7
Haledon			3								3
Hamburg	2				1	1					4
Hamilton Square	3	1									4
Hammonton	1				1						2
Hampton	2				3	2					5
Harrison			10	3					1		14
Harrisonville											1
Hasbrouck Heights			9	1							10
High Bridge			2								2
Hightstown	10	6	10	3	3	1					33
Highlands	2		2		4				1		11
Hoboken	12	1	7	7	12	12	1		2		24
Holmdel			1		4		3		9	1	8
Hopewell	49	53	1		9	2					114
Holy Beach			1								1
Irrington	24	25	18	2	19	1			3		92

TABLE D.—SHOWING THE NUMBER OF SPECIMENS EXAMINED DURING THE YEAR, ARRANGED BY CITIES AND TOWNS—Continued.

TOWNS.	DIPH- THERIA.		TUBER- CULOSIS.		TYPHOID FEVER.		MALARIA.		MISCEL- LANEOUS.		Totals.
	Primary.	Secondary.	Primary.	Secondary.	Primary.	Secondary.	Primary.	Secondary.	Primary.	Secondary.	
Island Heights	1	1								1	3
Imlaystown			3	1							5
Jamestown			3		57	9	1				379
Jersey City	29		258	19	5				6		21
Kearny			11	2	6	1			3		21
Keyport	7	3	3								3
Lakehurst			22	1	6						4
Lakewood	7	2	9	3	4	16	17		2		181
Lambertville	4	1	1		4	4	1		2		10
Laurel Springs	3		2	1	1						17
Lawrenceville	13		1		1				1		5
Leesburg	3		1		1						3
Leonia	1		2	1							3
Linden					1						1
Little Ferry			6	2	2	4	1				85
Little Falls	9	13	2	2	1	1					177
Lodi	3	1	2	2	2	1			5		25
Long Branch	9	2	30	3	115	18					29
Lyndhurst	9	2	8	6					3		16
Madison	7		8	7	7	2	3		3		33
Magnolia											1
Malaga			2		3						5
Manahawkin					9						53
Manasquan			21	9	19	3					11
Maplewood	1		1								1
Mantra			1								1
Marlton			8	1							11
Matawan	1		8	1							15
Mays Landing	4	2	6	10	2		1				26
Maywood			5	6	2						19
Medford	1		3	1	3	1	1				5
Mendham	6	4	9	1	5		8	1	6		47
Merchantville	20	19	9	1	11	2					61
Metuchen	9		9	1							18
Midland Park	1		1		1				1		1
Millburn	1		2	2	6		1		1		11
Milltown	2	2	6								15
Millville	2		47	3							51
Milton					1						1
Minotola											1
Monmouth Beach	1				1	1					2
Montclair					19	2	8		10		107
Moorestown	32	21	12	3	69	8			1		114
Morristown	12	3	19	2							34
Morris Plains					1	16					17
Morris Hill	23	9	23	10	59	16			2	1	141
Mullica Hill	3	1			4	4					17
Neshanic			3	2	3		5		4		13
Netcong	3	2	43	5	9		7		4		73
Newark	4	1	18	10	24	2	8		1		129
New Brunswick	9	1	2		1				1		6
New Egypt	3	2									3
Newfield			4								5
Newfoundland	1		2	1	2						10
New Market	1		2		3	1					6
Newport	27	15	18		1						10
Newton	1	5			3	1					2
North Branch					1	1					2
North Bergen					2						54
Nutley	25	17	8	1	2						1
North Plainfield			1								1
Oakland					14						14
Ocean City			19	6	3						42

TABLE D.—SHOWING THE NUMBER OF SPECIMENS EXAMINED DURING THE YEAR, ARRANGED BY CITIES AND TOWNS—Continued.

TOWNS.	DIPH-THERIA.		TUBER-CULOSIS.		TYPHOID FEVER.		MALARIA.		MISCEL-LANEOUS.		Totals.
	Primary.	Secondary.	Primary.	Secondary.	Primary.	Secondary.	Primary.	Secondary.	Primary.	Secondary.	
Ocean Grove.....	11	20	8	1	9		2				51
Oradell.....	8	11	1						1		21
Orange.....	4		113	15	47	7	9	1	7	1	204
Oxford.....											3
Palisades Park.....	1		2	1	2						6
Palmira.....	4	7	6		8	3					29
Park Ridge.....	10	2	6		8	1	3				30
Parsippany.....											2
Passaic.....	158	129	185	37	78	25	26		13	6	627
Paterson.....	18	1	208	25	60	5					319
Paulsboro.....	4	2	5	1	4						16
Pedrickstown.....	2										2
Pennington.....	4		3	1							2
Penns Grove.....	1		2		2				2		7
Pensauken.....	1	3	1						2		7
Perrineville.....	1										1
Perth Amboy.....	2		104	19	52	1	5		7		190
Phillipsburg.....	1	1	8	2							12
Pitman.....	80	48	113	24	52	7	10		12	4	350
Pleasantville.....	29		21	1	10	3			1		65
Point Pleasant.....	14	1			9	1			1		26
Pompton Lakes.....	4		18	4	5	2			3		13
Port Norris.....	25		41	5	9		1		22	9	112
Princeton.....	57	12	49	6	32	4			6	9	166
Rahway.....	28	4	15		3		1		6		51
Ramsey.....	28	2	1		1						4
Raritan.....											1
Readington.....	6	2	12	4	6		4				34
Red Bank.....	3	2	30	5	14	3	5				64
Ridgewood.....	28	12	11	1	10		6				69
Ridgefield Park.....	1	1	4	1							7
Ringoes.....											1
Risley.....	4	1	10	7	3						14
Riverton.....	26	4	19	1	2	1					17
Rockaway.....	11	1	15	1	19				4	1	57
Roebling.....	8	3	12	4	5	1					49
Roselle.....	9	11									33
Roselle Park.....											20
Roosevelt.....	1										1
Rosemont.....	15	11	13		5		2				47
Rutherford.....	291	125	15	9	4						444
Salem.....			1								1
Secaucus.....	2		12	1	4						1
Scotch Plains.....											1
Sea Bright.....	1										24
Sea Isle City.....	1										1
Sergeantsville.....											2
Sewell.....	2	3	1								11
Shiloh.....											1
Short Hills.....	145	37	14	2	141	40			5	5	302
Stilman.....	31	35	32	7	2	1	17				151
Somerville.....	1										8
South Amboy.....	9	2	38	4	20						77
South Orange.....			2	4	4						6
South River.....	5		8	3	2						18
Springfield.....			4		39	13	4				60
Spring Lake.....					4	1					5
Stanhope.....	2		1								1
Stanton.....											2
Stewartsville.....	1	8	3		1						13
Stirling.....											

TABLE D.—SHOWING THE NUMBER OF SPECIMENS EXAMINED DURING THE YEAR, ARRANGED BY CITIES AND TOWNS—Continued.

TOWNS.	DIPH-THERIA.		TUBER-CULOSIS.		TYPHOID FEVER.		MALARIA.		MISCEL-LANEOUS.		Totals.
	Primary.	Secondary.	Primary.	Secondary.	Primary.	Secondary.	Primary.	Secondary.	Primary.	Secondary.	
Succasunna.....	2	2	4	1	3	1					13
Summit.....	32	55	37	2	50	8	6		5		145
Swedesboro.....	1		1		3				1		37
Tenafly.....	14	9	5	4							10
Tinnsville.....	5	4	1		4						11
Toms River.....	6		1		4						55
Town of Union.....			39	12							11
Trenton.....	140	28	569	85	553	106	22		117	13	1,664
Union Hill.....	1		11	1	7				1		21
Upper Montclair.....			20	1	9						30
Verona.....					1						2
Vincetown.....					1						2
Vineland.....	10		117	14	44				11		199
Waldwick.....			2		1						2
Wanaque.....			1		1						2
Washington.....	5	3	23	2	12	3	2		10	2	62
Watchung.....			2		2				1		10
Weehawken.....			2		5	1					14
Wenonah.....	3		2		1				1		6
West Collingswood.....			32	4	19				2		79
Westfield.....	17	3	32	4	19				2		84
West Hoboken.....	1		31		1						1
West Long Branch.....			21	1	7				1		52
West New York.....					2				5		32
West Orange.....			20	2	3				2		28
Westville.....	2		4	2							66
Westwood.....			32		19						3
Wharton.....	3				3	1					4
Whippany.....	10	1									11
White House Station.....	1										7
Wildwood.....			2		2						4
Wilburtha.....			2		9						11
Williamstown.....			12	4	9	1			5		50
Woodbine.....	20	6	12	4	2						22
Woodbridge.....	20	9	17	3	2				5		56
Woodbury.....	10	2	28	17	5				11	2	76
Woodcliff-on-Hudson.....			2		1						3
Woodstown.....	5		4	1	2	1			1		16
Wyckoff.....			1	1					1		4
Yarville.....	2										1
Blank.....	10		5								16
Totals.....	3,767	1,362	4,326	612	2,934	408	311	9	525	64	13,713

Table E shows the list of places where the mailing cases, provided by the laboratory, are kept in stock and may be obtained by physicians upon request. It is here inserted, in order that physicians and others requiring these cases may be enabled to ascertain without trouble where they may be had.

It is the intention of the director to keep these repositories supplied with mailing cases at all times, and persons maintaining them are requested to notify the laboratory promptly of their needs before their stock becomes entirely exhausted. Some little delay in sending out these cases is at times inevitable, but every effort is made to comply with requests for them as promptly as possible.

TABLE E.—LIST OF REPOSITORIES FOR MAILING CASES.

Allentown	George M. Carslake, Druggist.
Alloway	W. L. Ewen, Physician.
Andover	J. C. Clark, Physician.
Anglesea	Margaret Mace, Physician.
Arlington	W. E. Doremus, Physician.
"	August A. Strasser, Physician.
"	J. E. Thomson, Druggist.
Asbury Park	B. H. Obert, Secretary Board of Health.
Atco	J. I. Hiverder, Physician.
Atlantic City	Board of Health.
"	Atlantic City Hospital.
"	Cuscaden, Inc., Druggists.
"	H. H. Deakne, Druggist.
"	De Dans' Drug Store, Druggists.
"	Chas. H. Jackson, Druggist.
"	Lawrence's Pharmacy, Druggist.
"	Municipal Hospital.
Atlantic Highlands	Wm. F. Ridgway, Druggist.
"	Board of Health.
"	George D. Fay, Physician.
Audubon	Audubon Drug Co., Druggists.
"	I. G. Seiber, M. D., Druggist.
Barnegat	F. N. Bunnell, Physician.
Bay Head	W. H. Katzenbach, Physician.
Bayonne	J. A. Balinky & Son, Druggists.
"	Board of Health.
"	J. H. Burchell, Druggist.
"	F. N. L'Estrange, Druggist.
"	Landells Drug Store, Druggists.
"	D. I. Nalitt, Physician.
Bedminster	Strauss Bros., Druggists.
Belleville	J. B. Beckman, Physician.
Belmar	A. H. Osborne, Druggist.
Belvidere	Board of Health.
Berlin	Faust Bros., Druggists.
"	C. D. Heath, Clerk, Board of Health.
Bernardsville	Frank Stern, Physician.
Beverly	M. Hemmendinger, Druggist.
Blackwood	E. S. Adams, M. D., Physician.
Blairstown	Board of Health.
"	Wm. C. Allen, Physician.

TABLE E.—LIST OF REPOSITORIES FOR MAILING CASES—Continued.

Bloomfield	Board of Health.
"	Wm. W. Kwylar, Druggist.
"	Geo. M. Wood, Druggist.
Bloomsbury	James A. Betts, Physician.
"	E. L. Reigle, Physician.
Boonton	A. E. Carpenter, Physician.
"	John L. Taylor, Physician.
"	Cuthbert Wigg, Physician.
Bordentown	Deacon's Drug Store, Druggists.
"	Samuel W. Fitzgerald, Druggist.
Bound Brook	Fetterly & Loree, Druggists.
"	Lloyd & McNabb, Druggists.
Bradley Beach	W. K. Bradner, Physician.
Branchville	J. C. Price, Physician and Druggist.
Bridgeton	Board of Health.
"	Charles T. Dare & Son, Druggists.
"	Blew & Blew, Druggists.
"	Albert S. Elwell, Druggist.
"	J. C. Loper, Health Officer.
Burlington	Harold B. Allen, Druggist.
"	John W. Davis, Druggist.
"	H. B. Weaver, Druggist.
"	Geo. T. Williams, Druggist.
Butler	S. E. Estler, Druggist.
Caldwell	Edwin E. Bond, Physician.
"	Wm. N. Hasler, Druggist.
"	Essex County Penitentiary.
Califon	Board of Health.
Camden	Barrett Bros., Druggists.
"	George M. Beringer, Druggist.
"	Board of Health.
"	Camden City Dispensary.
"	E. W. Collins, Druggist.
"	Cooper Hospital.
"	Henry Curtis, Druggist.
"	R. I. Haines, Physician and Druggist.
"	Oscar N. Hinski, Druggist.
"	E. G. Hummell, Physician.
"	John W. Kohlman, Druggist.
"	Wilson J. Leib, Druggist.
"	George J. Pechin, Druggist.
"	William P. Weiser, Druggist.
"	West Jersey Hom. Hospital.
"	Lewis H. Wilson, Druggist.
Cape May	V. M. D. Marcy & Co., Druggists.
"	James Mecray, M. D., Druggist.
Cape May Court House	Willets Corson, Druggist.
Carlstadt	Albert Niederer, Druggist.
Carteret	Reason's Pharmacy, Druggist.
Cassville	Otto C. Thompson, Physician.
Cedarville	Walter P. Glendon, Physician.
Chatham	Weber & Co., Druggists.
"	A. D. Wyckoff, Druggist.
"	W. J. Wolfe, Physician.
Chester	Harris Day, Physician.
"	Alonzo P. Green, Druggist.
"	W. A. Green, Physician.
Clayton	C. F. Fister, Physician.
Clifton	Clifton Pharmacy, Druggists.

TABLE E.—LIST OF REPOSITORIES FOR MAILING CASES—Continued.

Clifton	Lester F. Meloney, Physician.
Clinton	Wm. H. Baker, Druggist.
Closter	Charles A. Richardson, Physician.
Collingswood	William Chamberlain, Druggist.
	Edward B. Rogers, Physician.
Columbus	J. E. Dubell, Physician.
Cranbury	B. F. Van Dyke, Physician.
Cranford	John Marion, Druggist.
	John R. Reay, Druggist.
Crosswicks	Charles L. Dey, Physician.
Daretown	Geo. Fitch, M. D., Physician.
Dayton	Edgar Carroll, Physician.
Delanco	H. W. Weiler, Physician.
Dennisville	Eugene Way, Physician.
Dover	Board of Health.
	Killgore & White, Druggists.
Dumont	J. E. Pratt, Physician.
Dunellen	Edward Pennock, Druggist.
East Orange	Board of Health.
"	John G. Boytine, Druggist.
"	Frank Fieger, Druggist.
"	Gillbard's Drug Store, Druggists.
"	Grove St. Pharmacy, Druggists.
"	T. G. Schriver, Druggist.
Eatontown	H. T. Partree, Physician.
Edgewater	Board of Health.
"	Paul Goldberg, Druggist.
Egg Harbor City	S. T. Hubbard, Physician.
Elizabeth	Board of Health.
"	B. F. Davis, Druggist.
"	Fred M. Egger, Druggist.
"	Elizabeth Gen. Hospital.
"	Richard Frohwein, Druggist.
"	C. W. Gorsuch, Druggist.
"	Henry Jacobson, Druggist.
"	Samuel M. Jacobson, Druggist.
"	Jefferson St. Pharmacy, Druggists.
"	Martin & Reibel, Druggists.
"	Walter I. McCann, Druggist.
"	Oliver & Drake, Druggists.
"	Elias W. Parsons, Druggist.
"	Wm. H. Reibel, Druggist.
"	Harry P. Reibel, Druggist.
"	Board of Health.
"	Wm. Rufus Richart, Chemist.
"	Samsons' Pharmacy, Druggists.
"	Henry J. Schmidt, Druggist.
"	Harry Schmidt, Druggist.
"	St. Elizabeth Hospital.
"	Edward Steeb, Druggist.
Elmer	F. C. Strutzlen, Druggist.
Englewood	Board of Health.
"	Lewis W. Brown, Druggist.
"	Bureau of Associated Relief.
"	Englewood Hospital.
"	W. R. Kent, Druggist.
"	R. Rockefeller Co., Druggist.
Englishtown	Wm. E. H. Schneider, Druggist.
	William E. Anderson, Physician.

TABLE E.—LIST OF REPOSITORIES FOR MAILING CASES—Continued.

Fairton	Harry E. Lore, Physician.
Far Hills	F. L. Field, Physician.
Farmingdale	V. Bacon, Druggist.
	W. R. Kimmouth, Physician.
Flanders	Board of Health.
Flemington	Franklin C. Burk.
Florence	David Baird, Jr., Physician.
Fort Lee	Carl L. Richter, Druggist.
"	Max Wyler, Physician.
Franklin Furnace	Chas. M. Dunning, Physician.
Freehold	W. B. Duryee, Druggist.
"	Joseph H. Rossell, Druggist.
Frenchtown	F. H. Decker, Physician.
Garfield	Bradley A. Reynolds, Druggist.
German Valley	S. G. Lee, Physician.
"	William James, Physician.
Gladstone	M. C. Smalley, Physician.
Glassboro	F. G. Thoman, Druggist.
Glen Gardner	N. J. Tuberculosis Sanatorium.
Gloucester	Atlantic Pharmacy, Druggists.
Grantwood	M. P. Brewster, Physician.
"	Philip E. Brundage, Physician.
"	H. F. Goemann, Druggist.
Guttenberg	Jacob B. Zimmerman, Druggist.
Hackensack	Alex. Denig, Druggist.
"	Hackensack Hospital.
"	Eugene A. McFadden, Physician.
"	C. V. S. Rea, Druggist.
"	C. R. Shryer, Druggist.
"	D. St. John, Physician.
"	T. E. Van Stone, Druggist.
Hackettstown	C. V. S. Rea, Druggist.
"	A. C. Van Syckle, Physician.
Haddonfield	W. W. Flitcraft, Druggist.
"	R. Willard, Druggist.
Hadden Heights	Chas. E. Shillet, Druggist.
Hainesport	Wm. C. Parry, Physician.
Haledon	Leo Joffe, Druggist.
Hamburg	Joseph G. Coleman, Physician.
Hamilton Square	F. B. Zandt, Physician.
Hammononton	Charles Cunningham, Physician.
Hampton	Morris R. Albright, Druggist.
Harrison	Board of Health.
"	Chas. W. Rothe, Druggist.
"	M. F. Squier, Druggist.
Hasbrouck Heights	J. A. Powelson, Druggist.
Highlands	John L. Oppermann, Physician.
Hightstown	D. H. Cunningham, Druggist.
"	Harvey G. Rue, Druggist.
Hoboken	Frank O. Colis, Druggist.
"	A. J. Dittmar, Druggist.
"	William Kamlah, Druggist.
"	Jefferson Pharmacy, Druggists.
"	Adolph Schmidt, Druggist.
"	Chas. H. Schmidt, Druggist.
"	St. Mary's Hospital.
"	Chas. Sunkel, Druggist.
"	George Wood, Physician.
"	J. F. Zenneck, Physician.

TABLE E.—LIST OF REPOSITORIES FOR MAILING CASES—Continued.

Hopewell	G. E. Pierson, Druggist.
Hudson Heights	Wm. T. Lins, Jr., Druggist.
Imlaystown	R. F. Garrison, Physician.
Irvington	John F. Ahrens, Druggist.
"	Harry McDavid, Druggist.
Island Heights	Henry H. Davis, Physician.
Jamesburg	J. C. Shinn, Physician.
Jersey City	Board of Health.
"	James D. Adams, Druggist.
"	J. G. Block, Druggist.
"	Boulevard Pharmacy, Druggists.
"	H. A. Bruckner, Druggist.
"	Wm. Buchbinder, Druggist.
"	L. E. Carpenter, Druggist.
"	Frank O. Cole, Druggist.
"	John C. Gallagher, Druggist.
"	A. Gold, Druggist.
"	H. S. Hitchcock, Druggist.
"	J. M. Holloway, Physician.
"	F. Lischke, Druggist.
"	Charles Loeller, Druggist.
"	H. F. W. Mayer, Druggist.
"	C. J. McCloskey, Druggist.
"	G. A. H. Mielke, Druggist.
"	Charles Molz, Druggist.
"	Albert Stehling, Druggist.
"	Stein & Co., Druggist.
"	Robert V. Smith, Druggist.
"	E. H. Struckman, Druggist.
"	Walter R. Taft, Druggist.
"	R. E. Wilhelm, Druggist.
"	George H. White, Druggist.
"	Samuel Weber, Druggist.
Kearny	Board of Health.
Kenvil	E. W. Kirkpatrick, Physician.
Keyport	R. C. Walling, Druggist.
"	William E. Warn, Druggist.
Lakehurst	Priest's Pharmacy, Druggists.
Lakewood	Lakewood Pharmacy, Druggists.
"	Leon A. Taylor, Druggist.
"	D. H. Hills Drug Co., Druggists.
"	The Harrison Drug Store, Druggists.
Lambertville	S. W. Codrhan & Co., Druggists.
Landing	Board of Health.
Lawrenceville	E. K. Fee, Physician.
Layton	Edward W. Jones, Physician.
Leesburg	George S. Spence, Physician.
Lindenwald	George W. Evans, Board of Health.
Little Falls	W. F. Van Dense, Physician.
Lodi	U. S. Pharmacy, Druggists.
Long Branch	E. B. Blaisdell, Druggist.
"	J. W. Bennett, Physician.
"	Frank K. Gano, Druggist.
"	Board of Health.
"	Monmouth Mem. Hospital.
"	S. J. Woolley, Physician.
Lamberton	J. H. Stermer, Druggist.
Lyndhurst	John W. Clarke, Physician.

TABLE E.—LIST OF REPOSITORIES FOR MAILING CASES—Continued.

Madison	Harvey C. De Hart, Druggist.
"	Chas. B. Gee & Son, Druggists.
"	Wm. H. Larison, Druggist.
Magnolia	Leslie C. Lyon, Physician.
Maplewood	B. B. Ranson, Physician.
"	G. H. Taylor, Druggist.
Matawan	Board of Education.
"	Nathan Ervin, Physician.
Mays Landing	Henry C. James, Physician.
Maywood	Frank Freeland, Physician.
Medford	Henry P. Thorn, Druggist.
Mendham	Leo Robinson, Druggist.
Merchantville	J. W. Kohlerman, Druggist.
"	Lewis R. Whitacre, Druggist.
Metuchen	Alfred L. Ellis, Physician.
"	Board of Health.
"	L. Y. Lippencott, Physician.
Middletown	D. D. Hendrickson, Physician.
Midland Park	Joseph Payne, Physician.
Midvale	Mr. Dubler, Physician.
"	Shippee's Pharmacy, Druggists.
Millburn	George S. Campbell, Druggist.
Millville	Emergency Hospital.
"	Smith & Reeves, Druggists.
"	Jesse Thornley Hughes, Druggist.
"	George W. Webber, Druggist.
Montclair	Mountainside Hospital.
"	M. J. Synott, Physician.
"	Board of Health.
Moorestown	Frank G. Stroud, Physician.
Morristown	Board of Health.
"	All Souls' Hospital.
"	Memorial Hospital.
"	Henry M. Smith, Druggist.
Mount Arlington	C. D. Gordon, Physician.
Mount Holly	H. B. Allen, Druggist.
"	Jones Pharmacy, Druggists.
Mullica Hill	Samuel F. Ashcraft, Physician.
Netcong	Drake-Bostedo Co., Druggists.
"	H. W. Thayer, Druggist.
Neptune Township	Board of Health.
Newark	Thomas W. Corwin, Physician.
"	St. Barnabas Hospital.
"	W. H. Warren & Co., Druggists.
New Egypt	William C. Jones, Druggist.
New Brunswick	G. H. Bissett, Druggist.
"	L. H. Hoaglandy, Druggist.
"	Middlesex Pharmacy, Druggists.
"	Monigan's Pharmacy, Druggists.
"	Schuyler S. Rust, Druggists.
"	P. A. Tilly, Druggist.
"	The Van Deursen Pharmacy, Druggists.
"	Edwin R. Van Pelt, Druggist.
Newport	George E. James, Physician.
Newton	Israel L. Hallock, Inspector.
"	H. C. Ryerson, Druggist.
Norma	David H. Rappaport, Physician.
Nutley	James Crammond, Druggist.
"	Henry T. Lefferts, Druggist.

TABLE E.—LIST OF REPOSITORIES FOR MAILING CASES—Continued.

Oakland	E. W. Hamilton, Physician.
Ocean City	Board of Health.
"	Maddock's Drug Store, Druggists.
Odgensburg	L. C. Burd, Physician.
Oldbridge	I. C. Randall, Physician.
Oradell	F. O. Blenckstone, Physician.
"	Board of Health.
"	C. W. Datesman, Physician.
Orange	Beegles Drug Store, Druggists.
"	John Frederick Behrens, Druggist.
"	C. E. Dooling, Physician.
"	Board of Health.
"	A. Mosler, Druggist.
"	Orange Memorial Hospital.
Palmyra	Lewis L. Sharp, Physician.
Park Ridge	Henry C. Neer, Physician.
Passaic	Board of Health.
"	Henry Balson, Druggist.
"	William C. Berger, Druggist.
"	Carroll Drug Co., Druggists.
"	General Hospital.
"	Otto Lane, Druggist.
"	Walter Peters, Druggist.
"	Post & Friedrich Drug Co., Druggists.
"	Eugene Richter, Druggist.
"	B. Rood, Druggist.
"	St. Mary's Hospital.
"	W. H. Stemmerman, Druggist.
"	St. Stephens' Pharmacy, Druggists.
"	Vanriper Co., Druggists.
Paterson	Board of Health.
"	Maxwell Bukofzer, Druggist.
"	Eye and Ear Infirmary.
"	Keller's Totowa Pharmacy, Druggists.
"	Louis Patmor, Druggist.
"	G. E. Pellett, Druggist.
"	St. Joseph's Hospital.
Paulsboro	A. B. Black, Druggist.
"	W. J. Moore, Druggist.
Pensauken	F. A. Seaman, Druggist.
"	Gerhard Loeling, Physician.
Penns Grove	Board of Health.
"	Robbins Pharmacy, Druggists.
Perth Amboy	Barnekoo & Petz, Druggists.
"	G. W. Fithian, Physician.
"	John L. Lund, Physician.
"	Dr. Ramsey, Physician.
"	F. A. Seaman, Druggist.
Phillipsburg	C. E. Griffin, Druggist.
Pitman	William C. Hoffman, Druggist.
"	C. B. Phillips, Physician.
Plainfield	Board of Health.
"	E. F. Chaplin, Druggist.
"	Hodge's Pharmacy, Druggists.
Pleasantville	Thomas F. Crawford, Druggist.
"	J. H. North, Physician.
Point Pleasant	A. B. Johnson, Druggist.
Pompton Lakes	William S. Colfax, Physician.

TABLE E.—LIST OF REPOSITORIES FOR MAILING CASES—Continued.

Port Norris	Samuel T. Day, Physician.
Princeton	Marsh & Co., Druggists.
"	William L. Briner, Druggist.
Rahway	George F. Brown, Druggist.
"	Davis' Pharmacy, Druggists.
"	N. J. Reformatory.
"	Joseph G. Smith, Druggist.
Ramsey	Board of Health.
Raritan	A. B. Rohn, Jr., Druggist.
Red Bank	Chas. A. Minton, Druggist.
Ridgewood	E. B. Thornton, Druggist.
"	H. A. Tice, Druggist.
"	W. L. Vroom, Physician.
Ridgefield Park	Charles Albert Knox, Physician.
"	H. C. Elsing, Physician.
Ringoes	Peter R. Young, Physician.
Riverside	Louis M. Hires, Druggist.
"	Warren C. Pine, Druggist.
Riverton	Alex. Marcy, Physician.
"	Chas. Street Mills, Physician.
Rockaway	George H. Foster, Physician.
"	Frederick W. Flagg, Physician.
Roebing	Paul Traub, Physician.
Roselle	Jay W. Rewalt, Druggist.
Roselle Park	Board of Health.
"	George H. Horning, Druggist.
Rosemont	G. N. Best, Physician.
Rutherford	Board of Health.
Salem	Wm. H. Andrews & Co., Druggists.
"	Davis Drug Co., Druggists.
"	Board of Health.
Sea Bright	Sea Bright Pharmacy, Druggists.
Seaside Park	Martin Goldsmith, Druggist.
Shiloh	H. H. Fritts, Physician.
Titusville	M. S. Simpson, Physician.
Skillman	N. J. State Village for Epileptics.
Somerville	John D. Case, Druggist.
"	Philip P. Cron, Druggist.
South Amboy	Board of Health.
"	D. Meacham, Physician.
South Orange	William H. Britton, Druggist.
South River	L. Evans Selover, Physician.
Springfield	J. A. Stites, Physician.
Spring Lake	D. H. Hills Drug Co., Druggists.
"	Ann May Memorial Hospital.
Stanhope	Nelden's Pharmacy, Druggists.
Stewartsville	F. W. Curtis, Physician.
Succasunna	N. H. Adsit, Physician.
Summit	Wm. Tyler Green, Druggist.
"	William H. Rogers, Druggist.
Sussex	Board of Health.
"	H. D. Van Gaasbeck, Physician.
Swedesboro	Guest & Guest, Druggists.
Tenaify	Board of Health.
"	F. G. Bower & Son, Druggists.
"	J. M. MacKellar, Physician.
Toms River	Board of Health.
"	Frank Brouwer, Physician.

TABLE E.—LIST OF REPOSITORIES FOR MAILING CASES—Continued.

Town of Union	August Frank Physician.
" " "	R. F. Hellstern, Druggist.
" " "	J. Quigley, Physician.
" " "	Lamberback & Bischoff, Druggists.
" " "	David Weisman, Druggist.
Trenton	Baker's Drug Store, Druggists.
" " "	W. H. Barnes, Druggist.
" " "	Thos. A. Brown, Druggist.
" " "	Christian Pharmacy, Druggists.
" " "	T. G. Cook, Druggist.
" " "	Oscar Davison, Druggist.
" " "	State Laboratory of Hygiene.
" " "	Board of Health.
" " "	Freeman's Pharmacy, Druggists.
" " "	W. H. Harbourt, Druggist.
" " "	Holcombe Bros., Druggists.
" " "	H. S. Hughes, Druggist.
" " "	William Jackson, Druggist.
" " "	I. J. Keuper, Druggist.
" " "	G. S. Laird, Druggist.
" " "	Louis Lavinson, Druggist.
" " "	Lewis W. Long, Druggist.
" " "	G. M. Lynch, Druggist.
" " "	James L. Mathis, Druggist.
" " "	McKinley Hospital.
" " "	Mercer Hospital.
" " "	T. H. MacKenzie, Physician.
" " "	Howard N. Richards, Druggist.
" " "	E. E. Riggs, Druggist.
" " "	Scott's Drug Store, Druggists.
" " "	Scott's Pharmacy, Druggists.
" " "	St. Francis Hospital.
" " "	Chas. S. Thatcher, Druggist.
" " "	Scott's Drug Store, Druggists.
" " "	John J. Strasser, Druggist.
" " "	David E. Stretch, Druggist.
" " "	Chas. Stuckert, Druggist.
" " "	W. Scott Taylor, Druggist.
" " "	The Tidd Pharmacy, Druggists.
" " "	Tuberculosis Hospital.
" " "	Wendels Drug Store, Druggists.
Union	J. M. Stites, Physician.
Union Hill	August Frank, Druggist.
Verona	Henry Fray, Druggist.
" " "	H. B. Whitehorne, Physician.
Vineland	Baker House Pharmacy, Inc., Druggists.
" " "	W. R. Faulkner, Physician.
" " "	C. R. Goodfellow, Druggist.
" " "	N. J. State Institution for Feeble-Minded Women.
" " "	Red Cross Pharmacy, Druggists.
" " "	West Side Pharmacy, Druggists.
Waldwick	S. E. Robinson, Physician.
Washington	Jenkins-Meeker, Druggists.
" " "	The Opera House Pharmacy, Druggists.
Weehawken	August Frank, Druggist.
" " "	William Kyvitz, Druggist.
" " "	J. I. Maggard, Druggist.
" " "	B. Sternick, Druggist.
" " "	William Koitz, Druggist.

TABLE E.—LIST OF REPOSITORIES FOR MAILING CASES—Continued.

Wenonah	Board of Health.
Westfield	George W. Frotchey, Druggist.
West Hoboken	Frank H. Eckert, Druggist.
" " "	Joseph J. Parentini, Druggist.
" " "	R. Steuer, Druggist.
" " "	A. C. Einbeck.
West New York	J. F. Justin, Druggist.
" " "	J. J. Lauterbach, Druggist.
West Orange	Board of Health.
" " "	A. M. Bretzfeld, Druggist.
" " "	George J. Geiger, Druggist.
Westville	Charles E. David, Druggist.
Westwood	G. M. Levitas, Druggist.
" " "	F. B. Palmer Co., Druggists.
" " "	Theodore E. Townsend, Physician.
Wharton	H. W. Kice, Physician.
Willamwood	William Major.
Williamstown	J. G. Edwards, Physician.
" " "	L. M. Halsey, Physician.
Woodbine	I. P. Behrman, Physician.
Woodbridge	R. A. Hirner, Board of Health.
" " "	B. W. Hoagland, Physician.
" " "	Ira T. Spencer, Physician.
Woodbury	A. L. Marshall, Druggist.
" " "	Merritt Drug Store, Druggists.
" " "	W. H. Sutton, Druggist.
Woodstown	J. W. Hueston, Physician.
" " "	C. P. McGeorge, Physician.
Wyckoff	Walter F. Keating, Physician.
" " "	D. E. Drake, Physician.

Report of the Division of Food and Drugs.

R. B. FITZ-RANDOLPH, *Chief.*

To the Board of Health of the State of New Jersey:

GENTLEMEN—I have the honor to submit the following report of the Division of Food and Drugs for the year ending October 31st, 1911.

The work of this division consists of investigations in the field and in the laboratory, having for their purpose the enforcement of the Food and Drugs Act (chapter 217 of the laws of 1907, and its amendments and supplements, which include the sanitary law of 1909, and the law relating to the production and distribution of shellfish), the laws regulating the sale of oleomargarine and other imitations of dairy products (chapter 84 of the laws of 1886, its amendments and supplements), the Slaughter House Act (chapter 295 of the laws of 1910), and the Cold Storage Act (chapter 169 of the laws of 1911). For the purpose of carrying out the provisions of these acts the division employs three chemists besides the chief, two food inspectors, a slaughter house inspector, a cold storage inspector, a laboratory assistant and two clerks. During the past year the work of the division has been greatly hampered because it has been impossible to fill vacancies in the force except after long delays, on account of the difficulty of inducing suitable persons to take the Civil Service examinations required. This is due, in part at least, to the salaries which are paid to the scientific assistants in the employ of the Board, which are so small as to be unattractive to the kind of men we need. The requirement of the Civil Service law making residence in the State a prerequisite to eligibility for examination also makes it difficult to get the kind of men we need. The supply of men properly trained in sanitary science is at present much smaller than the demand, and,

as there is no institution of learning within the State which gives adequate instruction in these branches, the supply of material we have to choose from is very scanty.

Our work has also been seriously interfered with by the construction during the year of a new office, store room and animal room for the laboratory. This necessitated the removal of the office of the division into one of the corridors where work was carried on under great difficulties. Further reference to the new office is made in the report of the Director of the Laboratory of Hygiene.

For several years the chief of the division has called attention to the fact that the force of inspectors was too small to properly police the State, and this is still the case. The inadequacy of this inspection force has been particularly embarrassing this year because of the great need for inspectors in the enforcement of the Slaughter House Act and the Cold Storage Act, as well as for the regular work under the Food and Drugs Act, which increases in amount and variety each year.

Since the passage of the Sanitary Act in 1909, which regulates the production, manufacture, handling and transportation of food, we have had numerous requests for assistance from officials of local boards of health who desired to enforce certain provisions of the act but did not know how to proceed. Unfortunately we were seldom able to render satisfactory service to these boards because we had no men to send to them, and more inspectors are imperatively needed for this purpose alone. The proper enforcement of the Sanitary Act cannot be accomplished by the State Board of Health with any force which it now has or is ever likely to have. Local boards have the same powers under it as the State Board, and it is upon them that we must rely for its enforcement, especially to that part of it which applies particularly to local conditions such as the cleaning up of grocery stores and meat markets and the supervision of similar local industries. But before the local boards can do effective work they need much assistance and instruction, and this instruction should be given by this division. If this plan could be adopted it would insure a uniform enforcement of the law throughout the State and a system of co-operation between us and the local boards which would result, not only in mutual benefit, but much more efficient protection of the citizens of the State against unclean and impure

food. In order that this plan may be satisfactorily carried out certain changes in the law are needed. Local boards of health are now empowered to enforce the food laws if they so desire. This enforcement by such boards should be made mandatory, and, for the purpose of securing uniformity of methods and procedure and proper action on the part of indolent and inefficient boards (of which we have too many in the State), the State Board of Health should be given some power of supervision over the work which these boards do in enforcing food laws.

In the report of this division for 1910 certain suggestions were made regarding legislation which is needed to enable us to do our work more expeditiously and economically, to fill in some obvious gaps in the food and drug laws, and to correct certain defects in our oleomargarine laws. Nothing was done by the Legislature last year in these directions, and attention is therefore again directed to these recommendations. An amendment to the food law providing a procedure for the seizure of goods found on inspection to be in violation of law is needed, as is also legislation which will adequately safeguard the preparation of horse meat for food. The need for such a law has been strikingly shown by the reference to the State Board of Health by the United States Department of Agriculture of certain facts which seemed to show that a firm operating a rendering plant in Kearny, N. J., were preparing for use as human food, in exceedingly unsanitary and objectionable surroundings, pickled horse meat made from horses which had died from disease. These facts were at once referred by the Board to the Attorney General and prosecutions were begun by him against the firm in question. These cases are still pending. The investigations of the Government inspectors showed that large numbers of horses, both alive and dead, were handled at this plant, and that during the year over one hundred barrels of the pickled product had been shipped abroad. The preparation of horse meat for food in this country is a business which, because of the high price of sound horses, and the abundant supply of worn out and diseased animals, needs the most careful supervision, and, in the writer's opinion, should only be permitted under a special license and under the eye of a qualified State inspector; and it is recommended that an act be passed containing this requirement.

More specific legislation is also needed to regulate the traffic in inferior and decomposed eggs. Very large quantities of eggs are brought into the State each year, destined for the cold storage warehouses, and ultimately for the New York market. Such of these eggs as are broken or cracked in transit are either sold by the warehousemen, or broken and frozen in cans. After the shell eggs are removed from storage, and before they are sold, they are candled, and the rots, spots and other defective ones rejected, and these are sold to dealers who either make a business of breaking eggs or who sell the product in the shell to bakeries. The frozen product is also used by bakers. It is no doubt true that eggs can be broken and frozen with a resulting product of good quality, but it is also true that this is seldom done in this State, the eggs which are broken being of a quality which would hardly be salable in the shell. The business, therefore, requires the strictest supervision, not only as to the character of the raw material, but also of the plant, equipment, and habits of the employes; and it is only by the exercise of such supervision that a satisfactory product can be assured. It is therefore recommended that an act be passed providing that no person shall engage in the business of breaking eggs, except under a license from the State Board of Health, and fixing a heavy penalty for operating without a license. It is also recommended that an act be passed requiring the labeling of all rots and spots so that they can be readily identified and traced. The traffic in rots and spots is assuming considerable proportions in this State, and, in so far as these are used in the manufacture of food stuffs, it should be stopped. During the year inspectors have had occasion to condemn and destroy large numbers of bad eggs in bakeries, which would have been used for food had we not prevented it.

More specific legislation is needed to regulate the manufacture and sale of soft drinks. The food law is so general in its terms that it is difficult under it to prevent the distribution of inferior and fraudulent material of this kind. The use of artificial colors should be either prohibited or carefully restricted in this class of goods, and artificial sweeteners should be specifically prohibited. Inspections in years past of many places where these goods are manufactured, show that most of them are not properly equipped or managed, and in some conditions are so bad that the product is inevitably seriously contaminated. The smallness of our inspec-

tion force makes it difficult to exercise proper supervision over them. It might be well to provide for licensing them, either by the State or local boards of health. This would result in the elimination of many of the worst ones and more supervision over those which survive.

Some supervision over the slaughter of animals intended for use as food is badly needed in this State. The investigations of our slaughter house inspector have produced abundant proof that a great many diseased animals, which are unfit for food, are slaughtered for that purpose each year. New Jersey is a heavy producer of milk, and therefore, large numbers of worn out, injured or diseased dairy animals go to the butcher annually. A large proportion of these cows would not be passed for food in slaughter houses having federal inspection, and they are, therefore, killed in places not under Government supervision, and are all disposed of within the State. The only remedy for this condition is to provide for a State system of meat inspection which will be a difficult and costly procedure, and will introduce radical changes in our methods of operating slaughter houses, but the need is great, and some legislation along this line is earnestly recommended. More specific legislation relating to the sale of immature veal is also desired. Proof of violation of the present law is being evaded by certain unscrupulous dealers who have discovered its weakness. The traffic in immature veal is heavy in this State, although during the last year a determined effort has been made to check it with good results in some sections.

Some specific legislation should be adopted, fixing a standard for lard, and defining the various compounds and imitations which are sold for lard. A good deal of adulterated lard is sold unlabeled, and the requirements of our food law are such that there is much difficulty in obtaining satisfactory analytical data on these substances to make proof of violation of the law. Section 14, relating to the washing of cans and utensils before returning them to the shipper, should be cured of its present defects and broadened to include all bottles, cans and receptacles which have been used for holding milk, whether such containers are shipped or not.

In last year's report the need of some method of bringing the work of this division to the attention of the public was mentioned, and it was recommended at that time that a monthly bulletin be

issued for general distribution, in which would be published information gathered by this division regarding impure food and drugs, and such other matter relating to the work of the Board as is of public interest. Such a bulletin would serve to interest as well as educate the public and would be a powerful factor in checking many fraudulent and dangerous practices which now continue because the public are not informed regarding them. Up to the present time no bulletins of this character have been issued, and it is recommended that such a publication be made during the coming year, and that specific legislative authority be obtained authorizing the Board to publish the results of inspections, and of special investigations, and also the result of all successful prosecutions. New Jersey is far behind most of the other States in this respect. Many of the States where much less work is done toward enforcing food laws, put forth readable and instructive bulletins at regular intervals, and so enable their citizens to derive the benefit of the State's work which properly belongs to them. Scarcely a day passes during which letters are not received from points, not only in this State, but all over the United States and abroad, requesting copies of the bulletin which the more progressive residents of other States assume as a matter of course that we publish, and one of the most unpleasant duties the writer has to perform in making reply to these inquiries, is to state that we have no bulletin to send to them and no other method of telling them what we are doing.

During the year 7,260 samples of food and drugs were examined, an increase of 725 over the previous year. Table 1 shows the number and kinds of samples examined.

TABLE 1.—SHOWING THE NUMBER AND KINDS OF SAMPLES EXAMINED DURING THE YEAR 1911.

Articles examined.	Above Standard.	Below Standard.	Total.
Milk and cream.....	3,053	291	3,344
Foods other than milk.....	1,613	2,094	3,707
Drugs.....	126	83	209
Totals.....	4,792	2,468	7,260

The following tables show in detail the number of samples of foods other than milk and cream which were examined during the year:

TABLE 2.—GIVES A DETAILED STATEMENT REGARDING THE FOODS EXAMINED DURING THE YEAR.

	Number above Standard.	Number below Standard.	Total number of Specimens.
Allspice, ground.....	79	.....	79
Butter.....	51	48	99
Candy.....	1	.....	1
Cheese.....	1	.....	1
Cinnamon, ground.....	70	1	71
Cloves, ground.....	81	.....	81
Cocoa.....	14	.....	14
Coffee, ground.....	3	.....	3
Color, paste.....	1	.....	1
Condensed milk.....	3	.....	3
Condiments.....	1	.....	1
Eggs, broken.....	.....	5	5
Eggs, shell.....	100	1,944	2,044
Extract, almond.....	2	.....	2
Extract, lemon.....	4	4	8
Extract, orange.....	.....	1	1
Extract, vanilla.....	4	1	5
Fer-mil-lac.....	1	.....	1
Ginger, ground.....	99	.....	99
Honey.....	3	1	4
Ice cream.....	131	.....	131
Ice cream powder.....	1	.....	1
Lard.....	6	.....	6
Mace, ground.....	68	1	69
Malt hop beer.....	2	.....	2
Maple syrup.....	2	1	3
Meat, beef.....	.....	3	3
Meat, chopped.....	.....	1	1
Meat, pickled.....	.....	1	1
Meat, pork.....	.....	1	1
Meat, veal.....	.....	24	24
Molasses.....	89	.....	89
Mustard, ground.....	64	1	65
Nutmeg, ground.....	5	.....	5
Oleomargarine.....	24	13	37
Olive oil.....	25	8	33
Orange juice.....	.....	1	1
Oysters.....	40	7	47
Paprika.....	2	.....	2
Pepper, black.....	200	.....	200
Pepper, red.....	39	.....	39
Pepper, white.....	77	.....	77
Pop corn.....	1	.....	1
Preservative.....	1	.....	1
Salt-peter.....	1	.....	1
Sausage.....	3	2	5
Vinegar, cider.....	245	22	267
Vinegar, compound.....	1	.....	1
Vinegar, spirit.....	3	.....	3
Vinegar, white.....	65	3	68
Totals.....	1,613	2,094	3,707

TABLE 3.—SHOWS THE NUMBER AND KIND OF DRUGS EXAMINED DURING THE YEAR.

	Number above Standard.	Number below Standard.	Total number of Specimens.
Aqua hamamelidis .....	.....	1	1
Linimentum camphoræ	1	1	2
Liquor potassii	2	16	18
Oleum olivæ	8	.....	8
Potassii bitartras	69	.....	69
Saxonite	1	.....	1
Sodii boras	2	.....	2
Spiritus camphoræ .....	.....	15	15
Spiritus menthæ viridis	7	18	25
Sulphur præcipitatum	8	1	9
Syrupus ferri iodidi	2	3	5
Tinctura iodi	22	25	47
Tinctura opii	4	3	7
Totals	126	83	209

MILK AND CREAM.

The results of the examination of the samples of milk and cream collected during the year are shown in the following table:

TABLE 4.—MILK AND CREAM EXAMINED.

Milk below standard with respect to solids.....	178
Milk containing added water.....	73
Milk containing preservatives.....	1
Skimmed milk sold in containers not properly marked.....	6
Cream below the legal standard with respect to fat.....	21
Cream containing thickening agents.....	9
Condensed skimmed milk sold in containers not properly marked.....	3
Total	291

It is noteworthy that only one sample of milk or cream was found which contained preservatives. The practise of adding chemicals to milk to prevent souring has almost ceased, owing to the relentless prosecution of offenders in years past, and also on account of more cleanly methods of production, better methods of transportation, and the more extended use of commercial pasteurization.

During the year the milk standard was reduced by the Legislature from 12 per cent. total solids to 11.50 per cent. This was done at the request of large numbers of dealers, especially in the northern part of the State, who claimed that their herds would not produce milk at certain seasons of the year which would meet the requirements of the law. This is undoubtedly true of some herds in this State, but most of our dairy cattle will give milk far in excess of the legal requirements, and, in the opinion of the writer, the reduction of the standard was a step in the wrong direction. What should have been done was not to reduce the standard, but to improve the quality of the dairy cattle in the State. During the last ten years the character of our dairy herds has greatly changed, and the quality of the milk has also changed, and for the worse. Too little care is taken by our milk producers in selecting stock for dairy purposes. Many of our dairymen never raise a calf, preferring to constantly buy cows which they milk for a few seasons and then sell them to the butcher. A large proportion of these cows are bought in New York State and elsewhere, and many of them are unfit for market milk production. If our farmers would take the trouble to raise their own calves from parents of proven worth, the dairy business in this State would be much more profitable than at present, and not so much clamor would be heard about the difficulty of meeting the legal requirements for milk.

It appears that gelatin is being used to some extent as a thickener for cream. Nine samples were examined which contained this substance. The use of gelatin or other thickeners in cream is a fraud, and all persons selling such mixtures are prosecuted. Condensed milk is also used in admixture with cream, usually in the manufacture of ice cream, but sometimes some of this product finds its way to market as cream. This is also a fraud, particularly easy of detection, and every effort will be made to stop it.

During the year a study was begun of the transportation of milk by rail in the southern part of the State. It was quickly learned that the railroads are not supplying the milk shippers with facilities with which to get their milk to market in proper condition. This is particularly true of milk which is sent to summer resorts along the shore. In some cases milk is carried on trains for upwards of five hours in midsummer without any

refrigeration whatever, and this undoubtedly results in a serious deterioration in its purity and wholesomeness, and is, therefore, in violation of the sanitary law. An effort will be made during the coming year to induce the railroad companies to provide refrigerator cars for the transportation of milk during the summer months. This is now done on those railroads which haul milk to New York City, and there is no reason why it should not be done by all. The transportation of milk in small lots by express companies in express cars is also almost always done under conditions which injure the milk in warm weather, and the matter will also be taken up with the express companies during the year.

BUTTER AND OLEOMARGARINE.

During the year a number of samples of butter were collected which were found to have been adulterated by the admixture of undue amounts of water, in one instance as much as 35 per cent. of water having been found. This adulteration is practised mostly by small dealers who buy tub butter from the West and rework it, incorporating therein as much water as their skill will permit. Butter containing over 16 per cent. of water is adulterated under the State standard, and fraud of this character will not be tolerated.

The high price of butter has resulted during the year in unusually large quantities of oleomargarine being sold. Oleomargarine is a healthful and nutritious substitute for butter, and there is no objection to its sale when sold according to law. The law is being systematically evaded, however, by many dealers who obtain a larger profit by selling it for butter. Some of the devices they resort to in their efforts to escape detection are very ingenious. Much oleomargarine is sold by peddlers who go from house to house and who have no regular place of business. These individuals carry their goods properly marked, according to law, in their wagons, but remove these markings before delivery to the customer. Certain storekeepers made a practise of refraining from notifying the customer that the substance purchased is oleomargarine, which is required by law, and place the legal markings on the bottom of the package where they cannot be readily seen by

the purchaser. Many tons of oleomargarine are sold for butter in this fashion every year, and it is very difficult to secure convictions in cases brought for violations of this character, our courts apparently regarding this kind of an offense as trivial, and refusing to convict for it; but it is not a trivial offense, but a studied and deliberate method of evading a wise and beneficent law for the sake of increased profit. This practise could be stopped if every package of oleomargarine exposed for sale was required to be labeled so that the customer could see the label, and such an addition to the oleomargarine law is urged. Much deception is practised by restaurant and hotel-keepers by serving oleomargarine on their tables in place of butter. Our law is somewhat weak on this point, and should be strengthened.

VINEGAR.

During the year a large number of samples of vinegar have been examined and most of them were found to conform with the accepted standards for the various kinds. It is quite certain, however, that there are numerous skillful imitations of cider vinegar on the market which yield figures on analysis so close to the figures obtained from genuine cider vinegar, that the analyst cannot feel that he has proof of adulteration, although he is certain that something is wrong. The analytical difficulties in the way of detecting these sophistications are formidable, and the dealers in this class of goods have become exceedingly skillful in their manufacture of preparations which seem to be compounded expressly to deceive the chemist.

Attention should be called to the analysis of 131 samples of ice cream reported in table 2. We have no standard for ice cream in this State, and it was necessary, therefore, to classify all these samples as above standard, although they varied widely in composition. No deleterious substances were found in them.

Table 5 shows the places visited by our inspectors during the year, and the number of visits to each place:

TABLE 5.—SHOWING THE PLACES VISITED BY INSPECTORS AND NUMBER OF VISITS TO EACH PLACE.

Aldine	3	Dover	15
Allamuchy	1	Dumont	1
Allenhurst	1	East Newark	2
Alloway	3	East Orange	2
Andover	4	East Rahway	1
Anglesea	1	Eatontown	1
Annandale	4	Egg Harbor	2
Asbury Park	2	Elberon	1
Atlantic City	13	El Dora	1
Atlantic Highlands	1	Elizabeth	14
Avon	1	Elizabethport	1
Augusta	2	Elmer	4
Barley Sheaf	1	Elmwood Rd.	1
Bayonne	12	Englewood	3
Bay Way	1	Englishtown	1
Beaver Run	1	Everittstown	1
Belmar	2	Fairfield	2
Belvidere	2	Fairlawn	2
Bergenfield	1	Fairton	1
Berlin	1	Flagtown	2
Bernardsville	1	Flemington	2
Beverly	2	Florence	2
Blackwood	2	Franklin Furnace	5
Blairstown	2	Freehold	5
Blenheim	1	Garfield	1
Bloomfield	1	Garwood	1
Bogota	1	Gibbstown	2
Boonton	6	Glassboro	2
Bordentown	3	Glenwood	2
Bound Brook	1	Gloucester	5
Boynton Beach	1	Greenwich	1
Branchville	3	Grovesville	1
Bridgeton	14	Hackensack	1
Broadway	2	Hackettstown	1
Brotzmanville	1	Haddonfield	2
Burlington	6	Haddon Heights	2
Butler	1	Hainesburg	2
Caldwell	3	Hamburg	2
Camden	109	Hammonton	2
Cannel	1	Hampton	2
Cape May	2	Hancocks Bridge	1
Cape May Court House	1	Harmersville	2
Cedarville	2	Harrington Park	2
Chatham	1	Harrison	1
Clayton	3	Harrisonville	1
Clifton	2	Hightstown	2
Clinton	4	Hilton	2
Closter	1	Hixson	1
Collingswood	8	Hoboken	2
Columbus	1	Holly Beach	4
Communipaw	1	Hopatcong	1
Cranbury	3	Hope	1
Cranford	1	Hopewell	1
Crosswicks	1	Howarth	5
Daretown	3	Irvington	1
Deerfield	4	Island Heights	1
Delanco	1	Jamesburg	1

TABLE 5.—SHOWING THE PLACES VISITED BY INSPECTORS AND NUMBER OF VISITS TO EACH PLACE—Continued.

Jersey City	97	Oxford Furnace	1
Jutland	2	Palmyra	3
Kearny	1	Passaic	11
Keyport	1	Passaic Park	1
Lafayette	10	Patterson	28
Lambertville	1	Pattersonburg	1
Laurel Springs	5	Paulsboro	1
Lebanon	1	Pemberton	2
Leesburg	1	Pennington	1
Lewistown	1	Penns Grove	2
Little Falls	2	Perth Amboy	3
Little Ferry	1	Phillipsburg	2
Lodi	1	Pitman	5
Long Branch	3	Plainfield	1
Lumberton	1	Pleasantville	2
Madison	5	Pompton Lakes	1
Magnolia	1	Port Reading	1
Manasquan	1	Prospect Plains	1
Marksboro	1	Quarryville	2
Marlboro	1	Quinton	1
Martinsville	2	Raritan	1
Matawan	4	Raven Rock	1
Maurer	1	Ridgefield Park	1
Mays Landing	4	Ridgewood	1
McAfee	2	Riegelsville	1
Medford	2	Riverside	4
Mendham	2	Riverton	3
Merchantville	4	Rockaway	1
Metuchen	2	Roebling	4
Milford	2	Roselle	5
Millburn	2	Rosemont	2
Millville	9	Rosenhayen	1
Monmouth Junction	1	Rutherford	1
Monroeville	3	Salem	13
Montgomery	1	Sea Bright	2
Montville	1	Secaucus	1
Moorestown	2	Sergeantsville	2
Morristown	20	Sewaren	1
Mount Holly	4	Sharptown	3
Mount Pleasant	2	Shiloh	1
Mulford Station	1	Shirley	2
Neshanic	4	Shrewsbury	2
Netcong	1	Somers Point	1
Newark	73	Somerville	2
New Brunswick	4	South Orange	4
New Egypt	1	Spottswood	2
New Dunham	1	Spring Lake	1
Newport	1	Stanhope	1
Newton	19	Stewartsville	1
Norma	2	Stockton	2
North Branch	4	Summit	8
North Newark	1	Sussex	7
North Vineland	1	Swedesboro	3
Norwood	1	Teaneck	1
Oaklyn	1	Tenafly	1
Ocean City	2	Tennent	2
Ocean Grove	2	Three Bridges	3
Orange	17	Toms River	1

TABLE 5.—SHOWING THE PLACES VISITED BY INSPECTORS AND NUMBER OF VISITS TO EACH PLACE—Continued.

Tranquility	1	West Englewood	1
Tremley	1	Westfield	1
Trenton	60	West Hoboken	1
Troy Hill	1	Westmont	1
Union Hill	8	West New York	1
Vienna	2	West Norwood	1
Vincetown	1	West View	1
Vineland	2	Westville	1
Wallpack Centre	1	White House	3
Warbasse	2	Wildwood	2
Washington	4	Williamstown	4
Washington Valley	2	Woodbine	2
Weehawken	3	Woodbury	2
Wenonah	4	Woodstown	2
West Belmar	1	Wrightstown	2
West Collingswood	2	Yardville	1
West End	1	Yorktown	1

The number of the inspections made in these places, and the kinds of places visited, arranged by months, is shown in table 6:

TABLE 6.—SHOWING THE NUMBER AND KIND OF PLACES VISITED BY THE INSPECTORS DURING THE YEAR FOR THE PURPOSE OF COLLECTING SAMPLES AND GATHERING INFORMATION REGARDING SANITARY CONDITIONS.

	Milk Wagons.	Milk Depots.	Grocery Stores.	Drug Stores.	Milk Cans.
November	257	16	175	...	318
December	157	43	341	10	24
January	153	55	453	15	4
February	217	44	303	11	400
March	194	31	113	4	400
April	141	46	333	15	...
May	259	69	310	...	...
June	212	65	471	21	67
July	205	56	279	16	73
August	173	67	284	13	...
September	47	14	102	2	68
October	230	44	315	7	400
Totals	2,245	550	3,479	114	1,754

	Slaughter Houses.	Meat Markets.	New Stands.	Canning Factories.	Cold Storage Plants.
November	11	2	...	...	...
December	1	8	...	...	...
January	20	...	...	...	...
February	19	16	26	...	4
March	25	...	...	...	...
April .....	...	3	...	...	...
May	9	18	...	...	...
June .....	...	4	...	...	1
July	37	...	...	...	...
August	43	8	...	...	3
September	13	3	...	41	...
October	24	6	...	...	38
Totals	202	68	26	41	46

	Bottling Establishments.	Confectionery Stores.	Bakeries.	Butter Stores.	Miscellaneous Inspections.
November .....	...	...	...	...	5
December .....	...	...	...	...	16
January .....	...	...	...	...	4
February	4	4	...	...	...
March .....	...	3	...	...	14
April .....	...	6	...	...	9
May .....	...	4	...	...	6
June	1	8	9	...	2
July .....	...	2	...	16	4
August	2	...	...	...	16
September	3	...	6	...	20
October .....	...	...	2	...	2
Totals	9	27	17	16	98

During the year almost all of the canning factories in the State were carefully inspected for the purpose of securing information which might lead to improvement in the conditions known to exist in some of them. A description of these inspections will be found elsewhere in this report.

Examination of empty milk cans, made during the year, shows great improvement in the condition of these cans as returned to the shipper. In almost all cases they were found to have been washed and were in a satisfactory state of cleanliness. Some few dealers are still violating the law by shipping dirty cans, but the number of such violators is small, and we hope to stop this practise entirely during the coming year.

Much important work has been done toward cleaning up our slaughter houses, and, considering the short time the slaughter-house license law has been in effect, much has been accomplished in securing better conditions. An account of this work will be found elsewhere in this report.

The column headed "Miscellaneous Inspections," in table 6, refers to a variety of investigations somewhat outside of our regular work, most of which were undertaken at the request of local boards of health. Requests for assistance of this sort from local boards of health are rapidly increasing in numbers, and nothing but the smallness of our inspection force prevents us from complying with many more of them.

Our inspectors are all men of experience in the examination of food and drugs, and as a rule only collect samples for analysis when they have some reason to suspect that the law is being violated. Large numbers of articles are examined each year from which no samples are taken, because it is found that they are obviously in compliance with the law. The following table shows the number and kind of these inspections:

TABLE 7.—SHOWING THE NUMBER OF ARTICLES EXAMINED BY INSPECTORS DURING THE YEAR WHICH WERE EVIDENTLY IN COMPLIANCE WITH THE LAW AND OF WHICH NO SAMPLES WERE TAKEN.

	Milk.	Butter.	Food.	Drugs.
November	568	317	20	12
December	514	599	600	195
January	237	687	695	200
February	509	689	867	375
March	298	136	275	70
April	392	409	629	205
May	444	345	556	145
June	522	442	582	140
July	631	302	604	165
August	520	282	604	150
September	102	114	244	50
October	592	311	547	165
Totals	5,329	4,723	6,223	1,692

COLD STORAGE.

During the year 1910 some agitation arose in the State, principally in Hudson county, regarding the alleged improper practices of persons there engaged in the cold storage of foods. A considerable amount of newspaper notoriety was given to the subject and statements were made of such a character as to arouse the suspicion of the public that the cold storage of foods was attended on the one hand by serious deterioration in their quality and even in their wholesomeness, and on the other, by a very large increase in the cost of food so stored, as compared to that of similar foods of the same character which had not been placed in storage, it being stated that the facilities for storage of perishable foods which these warehouses afforded, enabled speculators to increase the cost of such foods, by storing them for long periods of time and creating an artificial scarcity, resulting in high prices. This agitation was not confined to New Jersey alone, but developed in other parts of the country as well. In order to rectify this condition a bill was introduced in the Legislature of 1910 which had for its object the regulation of cold storage warehouses. This bill fixed a time limit of six months, beyond which foods might not be legally stored, and also provided that foods which were placed in storage must be marked with the date of storage. The bill as first presented to the Legislature was very defectively drawn, and if enforced, would have inflicted much hardship on the cold storage industry without securing an adequate return to the public. Representatives of the cold storage industry in this State vigorously opposed this legislation at several hearings which were held upon the bill, and it failed to pass.

In 1911 a very similar bill was introduced which was also defective in its provisions, and this bill was likewise opposed by representatives of the cold storage industry as well as by other persons who believed in the proper regulation of cold storage, but who were convinced that such regulation would not be accomplished by the bill under consideration. The bill was finally changed in a number of particulars and passed the Legislature, and on April 21, 1911, was signed by the Governor.

This law provides that articles of food may not be placed in cold storage unless the date of entry is marked upon the article or

upon the package containing it, and that articles of food which have been placed in cold storage in other States may not be put in storage in this State unless the original date of entry into storage is marked upon the food or upon the container. It is provided, however, that articles of food which have been stored in other States may be stored in this State without the date of original entry into storage if consent for such storage is obtained from the State Board of Health, and it is also provided that no foods may be stored for a longer period than ten months, unless consent for such longer storage is obtained from the State Board of Health. The Board is given power and authority to inspect and supervise all cold storage establishments in the State, and is also empowered to make rules and regulations for the control of such establishments and for the protection of the foods kept therein. The bill further provides that persons operating cold storage warehouses shall submit quarterly reports to the State Board of Health on or before the 25th of January, April, July and October, showing all articles of food held by them in cold storage on those dates. Articles of food which have been held in cold storage for periods longer than ten calendar months without consent of the State Board of Health, shall be sold at auction unless they are found to be in a condition which renders them unfit for use as food, in which case they shall be condemned and destroyed. The transfer of foods from one warehouse to another for the purpose of evading the requirements of the act is prohibited. Foods which have been held in cold storage and removed therefrom and exposed for sale are not permitted to be replaced in cold storage. Violation of any of the provisions of the act is punishable, for the first offense, by a fine not exceeding five hundred dollars. A second violation of the act constitutes a misdemeanor and is punishable by a fine or imprisonment, or both.

In accordance with the provisions of section five of the act above referred to, the State Board of Health adopted regulations for the government of cold storage warehouses. These regulations were necessarily more or less tentative in character, and it will probably be necessary to alter them in several particulars and to extend them so that they will more fully cover the ground. These rules and regulations are as follows:

RULES AND REGULATIONS.

1. For the purpose of enforcing this act the term "cold storage" will be held to mean the storage of foods, intended for sale or distribution, in establishments employing refrigerating machinery or ice for the purpose of refrigeration, for a period exceeding thirty days, at or below a temperature of forty degrees Fahrenheit; and the term "cold storage warehouse" will be held to mean any establishment employing refrigerating machinery or ice for the purpose of refrigeration, in which foods intended for sale or distribution are stored at or below a temperature of forty degrees Fahrenheit for a longer period than thirty days.

2. Articles which are held at low temperatures for temporary protection only, for periods less than thirty days, will not, for the purposes of this act, be regarded as being held in cold storage, and such articles need not be dated, but such articles must be kept in separate rooms or enclosures from which articles are kept in cold storage, and persons operating cold storage warehouses must keep an accurate record of the date of receipt and removal of such articles, which record shall at all times be open to inspection by agents of the State Board of Health; *provided, however,* that if articles of food which have been kept at a low temperature for temporary protection are held for more than thirty days at such low temperature, they shall then be regarded as having been placed in cold storage, and shall be marked, in the manner provided in rule four, with the day, month and year when the period of temporary protection began, and such articles shall be removed from the room or enclosure in which articles temporarily protected are kept, and shall be placed in rooms or enclosures used for cold storage.

3. Articles of food intended for cold storage shall, when they are offered for or placed in storage, be enclosed in boxes, barrels, crates or other packages sufficiently strong and tight to prevent them from being injured by careless handling, unless the articles are of such a character that it is impracticable to pack them in containers.

4. When articles of food contained in packages are placed in cold storage, each package shall be legibly marked in plain figures, not less than three-eighths of an inch in height, with the day, month and year when such articles were placed in storage, and when articles of food not contained in packages are placed in cold storage, each individual article shall be marked in the same manner. Figures separated by hyphens may be used to indicate dates, and it will be regarded as sufficient dating if the last two figures of the number denoting the year when such articles of food were placed in cold storage are used. For example: June 26th, 1911, may be written:

6-26-11.

Whenever tags or labels are used on which dates are to be marked, they must be securely fastened to the articles to which they are affixed.

5. Articles of food held at low temperatures during the process of manufacture will not be regarded as being held in cold storage within the meaning of this act, and such articles need not be dated.

6. When articles of food have been kept in cold storage for ten calendar months, report of such fact shall be made to the State Board of Health by the persons having custody of such articles, and such articles shall be held in cold storage by such persons until they have been inspected by the agents of the State Board of Health and released by order of the Board.

7. Upon receiving applications therefor, the State Board of Health will issue temporary consent to persons operating cold storage warehouses, permitting them to receive articles of food which have been in cold storage in

other states, but which do not bear the dates of entrance into such storage; which consent shall be good only until such articles have been inspected by agents of the State Board of Health. If upon inspection it is found that such articles are in proper condition for further storage, and if it appears that the person having custody of them has been unable to ascertain the date on which they were placed in cold storage in another state, a permanent consent for the storage of such articles may issue. If it is found that such articles are in such a condition that further storage will impair their purity, quality or wholesomeness, permission for further storage will be refused.

8. For the purpose of facilitating the removal of articles of food from cold storage before the expiration of the statutory period of ten calendar months persons operating cold storage warehouses shall notify the owners of all articles of food stored by them of the date when such articles will have been in storage ten months, at least fifteen days before such ten months have elapsed.

9. Until further notice, the following classification of foods will be used by persons operating cold storage warehouses and refrigerating plants in making quarterly reports of articles of food held in cold storage:

Eggs, case.	Fish (including shell-fish), fresh.
Eggs, broken.	Fish, salted, smoked or pickled.
Butter.	Dried fruits.
Cheese.	Nuts.
Poultry.	Green fruits.
Game.	Green vegetables.
Meat, fresh.	Miscellaneous.
Meat, salted, smoked or pickled.	

Shell eggs are to be reported in terms of cases and dozens; all other articles to be reported as packages, and, in so far as the same is practicable, by weight. Articles not intended for use as food products are not to be reported.

10. Requests for permission to store food for a longer period than ten calendar months must be made by the owners thereof to the State Board of Health, upon blanks which will be furnished by the Board upon application. No such request will be considered by the Board unless a satisfactory reason, stating why such extension of storage is desired, is given.

Before such requests are granted the articles of food to which they refer must be inspected by an agent of the Board. Requests should therefore be made at least two weeks before the statutory time limit for storage has expired.

11. No materials in a state of decomposition or putrefaction, or in any other condition which renders them unfit for use as food, shall be placed in cold storage in the same room or enclosure with articles intended for use as food.

12. When articles of food, held in cold storage, are removed from the packages in which they were contained and placed in other packages, the date of original entry into cold storage of such articles shall be placed upon the containers into which they have been transferred; and if articles of food which were placed in cold storage on different dates are packed in the same container, the date of storage of the article longest stored shall be placed upon the container to which such articles have been transferred.

In preparing these rules the Board was at once confronted by the very difficult task of attempting to adapt an imperfect and hastily drawn law to the varied requirements of a very complex industry. No one who has not made a special study of this in-

dustry can realize either its importance to our modern civilization or the extraordinarily diverse conditions which any law attempting to control it must take into consideration. It will not be seriously contended by any one that the proper cold storage of foods is an industry which should be either suppressed or even checked. The preservation of foods by cold storage is a perfectly proper and legitimate industry when carried on in a proper manner, and results, in the case of perishable foods so stored, in the extension of a short natural season to a much longer artificial one, thus assisting in the conservation of large quantities of useful material which would otherwise be wasted, and satisfying the demands of the market for certain foods all the year round. The preservation of foods has been practised in various ways for thousands of years, and cold storage is undoubtedly the best method of preserving certain kinds of foods which is at present available. The purpose of any proper legislation, therefore, is not to check or suppress any legitimate phase of the industry, but to correct certain abuses which have arisen chiefly because proper regulation has been lacking.

The first problem which presented itself was to ascertain what was meant by cold storage within the meaning of the law. The act does not define cold storage, and it therefore became necessary for the Board to incorporate a definition in its rules. This definition is necessarily arbitrary, but it was so drawn as to cover what is ordinarily understood as "cold storage;" the storage of foods for considerable periods of time at low temperatures, and to exclude that merely incidental storing of foods at low temperatures for a limited time, which is done by almost every person engaged in the production, distribution or handling of perishable foods. This kind of storage cannot be effectively regulated by the State Board of Health unless an enormous increase in the number of our inspectors is made, and a careful reading of the act will make it clearly evident that such storage was not contemplated when it was drawn. The time fixed, thirty days, is sufficiently long to cover any proper period of temporary protection, and the temperature adopted is below that ordinarily maintained in refrigerators cooled by ice alone. Before this rule was adopted a similar one was put in force by the State Board of Health of Indiana, and one which is substantially the same has been promulgated by the Commissioner of Health of New York State.

In order to make it possible to control the holding of goods for

temporary protection in warehouses where cold storage, as defined in rule 1, is practised, rule 2 was adopted. It will readily be seen that unless undated goods are kept separate from dated ones no method of inspection will serve to show whether the requirements of the law relating to dating are being carried out. It has been found, however, that the warehousemen prefer to date all their goods rather than to provide separate enclosures for undated articles.

The necessity for rule 3, which provides that articles must be enclosed in containers whenever practicable, is obvious. Most articles cannot be properly protected unless packed in some kind of a container. The only difficulty which has arisen with respect to the enforcement of this rule is in the case of the storage of fish. It is the custom in some establishments to freeze fish and store them loose in piles, and the warehousemen maintain that this is a satisfactory method of storage, and that the cost of stored fish would be materially increased if it became necessary to box them. The loose storage of fish, however, is of doubtful propriety and is a problem which will have to be dealt with in the future.

It has been contended that rule 4 relating to the manner of marking the date of storage upon goods should have been so drawn as to require that the words "Placed in cold storage" should precede the date in order that when the package upon which this date is marked will show that it has actually been so stored. That this would be desirable there can be no doubt, but there is nothing in the act giving the Board power to make such a regulation, so that it could not have been enforced if made.

One of the great difficulties of the act has been the provision requiring goods which have been in cold storage outside the State to bear the date of original storage before they can be placed in storage in New Jersey, unless permission to store these goods is first granted by the Board. This provision is unenforceable. An inspector in New Jersey cannot find out whether eggs coming from the west have been in storage there or not. He may be morally certain that they have, but it is impossible of proof. Moreover, many of these articles which have been stored in States where dating is not required have passed through several hands before they reach New Jersey, and their past history cannot be ascertained. Foods of this sort are shipped for storage to this State in immense quantities, and, if the State Board of Health refused to permit these goods to enter the warehouses here until a consent had been

issued on each lot, so much delay would necessarily occur as to result in the loss of many thousands of dollars worth of good food by spoilage each year.

In order to meet this difficulty rule 7 was prepared. This provides for the issuing of a temporary consent to recover undated articles, good for a period of one month, and valid only until the goods have been inspected. Owing to the smallness of our force it has not been possible to inspect all the articles admitted in this manner, and it is evident that not all the warehousemen are complying with this rule. This provision of the act should be repealed.

Rule 12 was adopted to cover certain practises which obtain in some of our warehouses where apples and other similar fruits are stored and which are graded and sorted in the warehouse, and are therefore removed from their original containers. The meaning of the rules not specifically referred to is believed to be sufficiently clear to obviate the necessity for further comment.

In attempting to enforce the provisions of this act this division was greatly hampered by the delay which occurred in procuring the services of a suitable inspector. Application was made to the Civil Service Commission soon after the act was passed, for an assistant in the Division of Food and Drugs whose duties should consist principally in the inspection of cold storage plants. An examination was held, open to citizens of the State, but no one succeeded in passing this examination, and it, therefore, became necessary to hold a second examination, open to all citizens of the United States. As a result of this examination one person was found who was able to meet the requirements of the Civil Service Commission, and of the Board, and he was appointed, his appointment taking effect October 1st. Before this time no regular inspector was available to investigate cold storage conditions in this State. A considerable number of inspections were made by other employes of the Division of Food and Drugs and much valuable information was obtained, but this inspection was necessarily fragmentary in character, and not much progress in regulating the industry was made.

During the year almost all the cold storage plants in the State have been inspected, many of them a number of times. A table showing the names and locations of these plants, together with the kinds of foods stored, the capacity of the warehouses, the method of refrigeration and the condition of the warehouses at the time of inspection, follows:

TABLE 8.—SHOWING THE NAMES AND LOCATIONS OF COLD STORAGE PLANTS, THE KINDS OF FOODS STORED, THE CAPACITY OF THE WAREHOUSE, THE METHOD OF REFRIGERATION AND THE CONDITION OF THE WAREHOUSE AT THE TIME OF INSPECTION.

<i>Cold storage warehouses.</i>	<i>Location.</i>	<i>Foods stored.</i>	<i>Capacity of warehouse.</i>	<i>Refrigeration.</i>	<i>Condition of warehouse.</i>
Merchants Refrigerating Co., Inc.	Jersey City	All foods except fresh fish, eggs, green fruits and meats.	3,000,000 cu. ft.	Direct brine	Good.
Union Terminal Cold Storage Co.	Jersey City	Eggs, green fruits and meats.	1,500,000 cu. ft.	Direct brine	Good.
Swift & Co.	Jersey City	Bags, green fruits and meats.	1,500,000 cu. ft.	Direct brine	Good.
North Jersey Cold Storage Co.	Jersey City	Fresh meats	205,200 cu. ft.	Direct brine	Excellent.
South Jersey Cold Storage Co.	Newark	All foods except fresh fish	100,000 cu. ft.	Direct brine	Good.
Wilkinson-Gladis Co.	Newark	Eggs, butter and fruits	114,000 cu. ft.	Direct brine	Good.
A. J. Connet Co.	Pleasanton	Eggs, butter and fruits	8,800 cu. ft.	Ice	Good.
Merchants Cold Storage Co.	Trenton	Mince meat and bottled meat.	50,000 cu. ft.	Direct brine	Good.
Atlantic Cold Storage Co.	Hightstown	Apples and pears	120,000 cu. ft.	Direct brine	Good.
J. Clark Heiple	Sweedsboro	Poultry	2,000 cu. ft.	Direct brine	Good.
John Heiple Ice and Cold Storage Co.	Glassboro	Apples	9,000 cu. ft.	Direct brine	Good.
Woodtown Ice and Cold Storage Co.	Woodstown	Apples	25,000 cu. ft.	Direct brine	Good.
Bridgeport Cold Storage Co.	Bridgeport	Apples	10,000 cu. ft.	Direct brine	Good.
Henderson Condensed Milk Co.	Salem	Meats, fruits	2,500 cu. ft.	Direct brine	Good.
Henry Muhs Co.	Paterson	Meats, fruits	2,600 cu. ft.	Direct brine	Fair.
Dreese & Snyder	Paterson	Cheese and butter	3,000 cu. ft.	Direct brine	Good.
Dreese & Snyder	Paterson	Cheese and butter	3,000 cu. ft.	Direct brine	Good.
Block Ice and Cold Storage Co.	Long Branch	Ice cream	75,000 cu. ft.	Direct brine	Good.
Cooke Co.	Long Branch	(Not operating at this time).			
Con Gaskin	Long Branch	(Not operating at this time).			
Holly Beach Cold Storage Co.	Holly Beach	Fresh fish	13,600 cu. ft.	Direct brine	Fair.
Joseph Campbell Co.	Atlantic City	Meats and fruits	27,332 cu. ft.	Direct brine	Good.
Hotel Strand	Atlantic City	Meats and fruits		Direct brine	Good.
Hotel Rudolph	Atlantic City	Meats and fruits		Direct brine	Good.

This table shows in the first place that very large quantities of food are stored during the year in this State, that the variety of articles so stored is also large, and that the sanitary condition of the warehouses is, on the whole, satisfactory. We have been unable to find any cold storage warehouse which was not in a fair condition, and in most of them the conditions were very good. Much care is taken by the warehousemen to properly control the temperature and humidity in the rooms in which storage takes place, and, as a rule, these rooms are kept clean.

In accordance with the provision of section six of the cold storage law, two sets of quarterly reports have been made by most of the warehousemen in the State. A few of these establishments have not submitted their reports for October. The following table shows the amount and kinds of foods which were in storage on the 1st of August and the 1st of October. The figures as here given are below the truth, as some warehouses have not reported, and it may be that there are some small warehouses in the State which we have not located, but it is believed that these figures very closely represent the real conditions which existed in the State at the time these reports were made.

TABLE 9.—SHOWING THE KIND AND AMOUNT OF FOOD HELD IN COLD STORAGE IN THIS STATE ON AUGUST 1 AND OCTOBER 1, 1911.

<i>Articles.</i>	<i>Reported as.</i>	<i>August 1st.</i>	<i>October 1st.</i>
Eggs	Dozens	21,759,430	24,825,916
Eggs, broken	Pounds	9,990	14,160
Butter	Pounds	3,983,265	4,321,494
Cheese	Pounds	107,727	139,824
Poultry	Pounds	2,012,210	1,007,666
Meat, fresh	Pounds	981,652	323,459
Meat, salted, smoked, pickled	Pounds	503,200	751,308
Fish, fresh	Pounds	805,500	1,279,190
Fish, smoked, salt	Pounds	220,705	226,811
Fruits, dried	Pounds	354,625	171,191
Nuts	Pounds	307,589	217,922
Fruits, green	Packages	6,097	50,545
Vegetables	Packages	2,170	1,262
Oils, edible	Barrels	16	40
Horse radish	Barrels	43	18
Lard	Pounds	8,620	2,000
Edible fat	Pounds	4,560	6,600
Condensed milk	Cases		3,228
Preserves	Pounds		8,350
Miscellaneous	Packages	9,558	4,845

In order that the various reports which the cold storage warehousemen are required to make may be of uniform character and contain the information which is needed by the State Board of Health, blanks were prepared and furnished to them upon which to submit their quarterly reports, for the purpose of requesting permission to store goods which had been in storage without the State, but which did not bear the date of original storage, for requesting permission to store goods for periods longer than ten calendar months, and for the reporting of articles of food which have been left in the warehouses for periods longer than ten months.

In an opinion given by the Attorney General at the request of the State Board of Health, it was ruled that the ten months referred to in the act began ten months after the passage of the act. This time has not yet elapsed, and it is impossible to say what effect, if any, the requirement of the law restricting the limit of storage to ten months will have.

Our inspections have shown that the provision requiring the date of entrance into storage be placed upon the article or upon the container in which it is packed, has been observed in almost all cases by the cold storage warehousemen. The dates are usually stamped by means of a rubber stamp upon the crates, barrels, boxes or other containers which are used to hold foods. For articles which are not stored in containers, such as sides of beef, or carcasses of veal or mutton, tags are generally used, which are attached to the carcasses by means of wire. The use of a tag seems to be more desirable than the practise of stamping the date directly upon the carcass where it is likely to become defaced by handling. In two fish warehouses in the southern part of the State, fish are frozen and stored in piles. These fish are not dated in compliance with the law, and it is somewhat difficult to devise a method of marking articles of this character which will not require radical changes in the method of storage.

Up to the present time no evidence has been gathered to show that foods which have once been exposed for sale have been returned to storage, but the time when this is most likely to happen, the period between Thanksgiving Day and the first of January, has not yet arrived. This practise is dangerous, resulting in a marked deterioration of the foods so handled, and every effort will be made to stop it.

No materials in a state of decomposition or putrefaction sufficiently advanced to be perceptible to the senses have been found in the cold storage rooms in which foods are stored, with the exception of one lot of poultry, consisting of five barrels, and one lot of canned eggs. These articles were condemned and ordered removed from storage, and were treated in such a manner that they could not be used for food.

Apples are frequently sorted before storage and at times after they are removed from storage. In both cases the containers into which such apples have been transferred bear the original date of entry into storage.

Eggs are frequently sorted at the large warehouses in the northern part of the State, upon arrival from the west, for the purpose of removing those which are broken or cracked. In such cases the refrigerating companies act as agents for the owners by securing an immediate sale for the broken or cracked eggs, or by breaking the eggs into cans for storage in the warehouse.

It is recommended that the Legislature be requested to modify the cold storage act in several particulars. Much more valuable information would be secured on the Board if the reports now required to be made quarterly were made monthly, and it is not believed that much additional labor would be imposed on the warehousemen. It is recommended that this change be made.

The plan of marking goods with the date of entrance into storage should be supplemented by a requirement compelling the marking of the date of removal, and a prohibition against the removal altering or defacing of such marks should be provided.

A provision such as is contained in the Indiana law, requiring the declaration of the fact that foods have been in cold storage when such are sold at retail should be added.

A provision requiring that all persons operating cold storage warehouses should be licensed, and fixing a reasonable annual license fee, should also be added.

Power should be given the State Board of Health to summarily close a warehouse if in their judgment it is necessary because of unsanitary conditions.

The present penalty section, which is cumbersome and probably so defective as to nullify the entire act, should be corrected, and proper penalties should be provided for violation of the rules adopted under the act.

It is further recommended that that portion of section 2 which requires goods stored in other states to be marked with the date of original storage be repealed. This provision cannot be enforced by State officials. Such a requirement as this can only be made operative by federal legislation.

INVESTIGATION OF OYSTER AND CLAM BEDS.

In the report of this division for 1910 reference was made to an act passed by the Legislature of that year, regulating the marketing of clams and oysters, with special reference to sanitary conditions on the beds in which they were grown. The enforcement of this act was entrusted to the State Board of Health, and that body was required to make inspections annually, or oftener, of every bed where clams and oysters were grown for sale, and was also required to issue certificates annually, setting forth the results of such examinations. It required but a short experience in attempting to enforce this act to demonstrate that it was faulty in many particulars. In the first place, its constitutionality was doubtful, owing to an obvious defect in its title. It was found that it was impossible to make an inspection of all the oyster and clam beds in the State within a year, especially as the Legislature failed to make any appropriation for enforcing the act. Oysters and clams grow along the entire length of our coast, from Newark bay to the Cohansy river, a distance of nearly two hundred miles, and most of this coast-line along the Atlantic ocean has behind it a tortuous network of bays and channels, so that the area to be covered is vastly greater than the actual coast-line would indicate. The oyster industry in this State is a very important one. About 10,000 persons are employed, and the value of the annual output is in the neighborhood of \$4,000,000. There are over 31,000 acres of leased oyster grounds in the State, besides which considerable numbers of oysters are taken each year from unleased areas. The inspection and regulation of clam grounds is much more difficult than that of oyster beds, because they are not leased. No accurate information relating to them is available, and the clams from them are gathered by large numbers of individuals who are difficult to locate and control.

An act that is impossible of enforcement is of little value, and the Legislature was requested, at its last session, to change this one in several particulars for the purpose of making its enforcement more certain and less laborious. This was done, and the new act provides that the Board shall inspect the oyster and clam beds as often as is deemed necessary, thus doing away with the necessity for making annual inspections of many places where they are not needed. The provision requiring the issuing of certificates was left out. The provision relating to the condemnation of oyster and clam beds found to be receiving polluting materials was broadened and now applies to the shellfish themselves as well as to the beds in which they grow.

These changes improved the act materially, but the Legislature, following the precedent established in 1910, made no provision for its enforcement. During the past year, the staff of the Division of Food and Drugs has been so occupied with other work that but little time could be devoted to this very important problem. In 1910 a survey was made of the oyster beds in the Maurice River Cove, and in the large grounds in Ocean, Atlantic and Cape May counties, from which most of our oysters are taken. This survey was necessarily of a preliminary nature, and should be repeated in much greater detail, but it was found that the oysters as taken from the leased grounds were almost all in a satisfactory state of purity, in so far as this purity could be ascertained by bacteriological examination.

Plans were made to continue this work during the present year, to extend it to other localities, especially to the northern part of the State, and to investigate the condition of the waters in which these oysters are floated before they are sent to market. The oysters taken in this State are almost all shipped in the shell. Our oystermen contend that it is not possible to ship these oysters and have them keep for a satisfactory length of time unless they are floated, that is immersed in fresher water than that in which they are grown, for a period of one or more tides. The practice of floating is therefore almost universal in this State. Floating is done at or near the mouths of tidal streams which, in a thickly settled State like New Jersey, are more or less liable to pollution, and the investigation of the quality of the streams used for this purpose is of great importance. Unfortunately, as has been stated, an unusual press of other work prevented the continuance

of these investigations, and our work on oysters during the year has been practically confined to the gathering of information relating to the collection and marketing of oysters and clams in the northern part of the State. A short account of these inspections follows:

Manasquan River. Oysters are not taken from the river. Soft clams and a few hard clams are gathered by natives of Manasquan, Brielle and Point Pleasant. During the summer season about sixty bushels of soft clams in the shell are shipped to points along the coast, as far north as Asbury Park. In the fall and winter the output is sent to New York City. Hard clams are scarce and none are shipped to market.

Shark River. A few oysters are gathered in the river during the winter months, but the output is small and is all used in the vicinity. Hard and soft clams are gathered in fairly large numbers, mostly during the summer months, but the demand for them in the vicinity is so great that they are all consumed locally. As far as can be gathered, the amount of polluting material, of a character which would render shellfish deleterious to health, which enters Shark river, is not great.

Shrewsbury River. On the Pleasure bay branch the continued pollution of the water by sewage and gas house wastes has rendered the shellfish which grow in these waters unfit for use. Oysters are no longer planted in this branch of the river, and clams which grow naturally there are not acceptable as food because of the pronounced taste of gas house wastes which they possess. On the Little Silver branch the pollution is not so extensive as to render the flavor of clams or oysters taken therefrom objectionable, but the oysters do not grow satisfactorily there at the present time, and the number taken from the river is very small. They are all consumed locally. Practically no clams are gathered in this branch of the river.

Navesink River, Sandy Hook Bay and Lower Raritan Bay.

Inspections were made during the summer of the places from which shellfish are gathered from the Navesink river, Sandy Hook bay and Lower Raritan bay, and of certain places on the shores of these waters where these shellfish are prepared for shipment. Clamming is the main industry on the river and affords employment to a large number of men. Soft and shedder crabs are taken from the river in considerable numbers, in the neighborhood of

Oceanic and Fairhaven. Both hard and soft clams are found at almost all points on the bed of the Navesink river, from the bay to Oceanic bridge. The favorite places for clamming, however, are located just below Oceanic bridge and off the point at the junction of the Navesink and Shrewsbury rivers, and also on the lower bar at the mouth of the river and out into the bay. Most of the men engaged in gathering clams sell their catch direct to dealers, who prepare them for shipment. The shipping places that are inspected are located at Locust Point, Highlands and Belford. Highlands is the business center for this industry.

At Locust Point, on the north shore of the river, directly opposite Oceanic, is located a small shipping house, the owner of which buys clams from men who procure them from the river during the summer. The output of this shipping house is disposed of to fish dealers in Red Bank and to the summer residents along the Rumson road, any surplus being shipped to New York City. All clams shipped from this place are shipped in the shell.

At that part of the borough of Highlands known as Parkertown, quite an extensive industry in the opening of clams, both hard and soft, exists. The largest of these opening houses are operated by Reuben Parker and John Taylor, both of whom buy clams from persons who gather them in the vicinity. Hard clams that are not shipped as soon as gathered are placed on a sand bed in the river opposite the shipping house, or upon floats moored at this point, and in bins so constructed that the clams are covered at high water. Soft clams are kept on floats in the river until needed for shipment. Mr. Taylor and Mr. Parker supply many of the clams used on the coast as far south as Belmar, and also ship large quantities to the New York market. All soft clams, except those used for steaming, are opened before shipping. An examination of the opening and shipping houses operated by Mr. Parker showed that grave defects existed in its construction and management. The building is a one-story structure about 12 by 18 feet, built upon piles, and has a leaky wooden floor. The side walls are rough, the frame work being exposed and the ceilings covered with cobwebs. The door and two windows are without screens and flies are numerous. The water used is drawn from a tap connected with the street main. There are no facilities for heating water or sterilizing utensils. At the time of the inspection, open soft clams were being packed for shipment in wooden barrels in

direct contact with broken ice. Some of these barrels were covered with pieces of old sacking and some were headed with wooden heads. The barrels used were second hand ones collected from grocery stores throughout the country. The ice used is supplied by local ice dealers, and most of it comes from Rockland lake. Hard clams are all shipped in the shell, packed in sacks, barrels and boxes of various kinds. The sacks are used for an indefinite number of times and many of them were in a filthy condition. The larger part of the open clams shipped by Mr. Parker are opened by the wives and children of the clambers at their homes. An inspection was made of several of these homes, and the methods of handling the product there was observed. At the time of this inspection the opening was being done in the back yards. The openers threw the open clams into various receptacles containing water drawn from the city main. The clams were then strung in bunches of twenty-five and delivered to Mr. Parker. There is no attempt at supervision over the cleanliness of the openers or the places where the work is carried on.

The other opening house, operated by Mr. Taylor, is situated on the bank of the river about two hundred yards above Parker's place. The building is a one-story structure, 20 by 10 feet, built upon piles, and is divided into two rooms, one of which has a tight concrete floor and the other a leaky wooden floor. The door and windows are without screens. Drainage from the floor flows directly upon the ground and thence into the river. Three women and one boy were engaged in opening clams in the room with the concrete floor. The clams after being opened were thrown into galvanized iron tubs containing water drawn from the city main. When the tubs became full the clams were strung in bunches of twenty-five, then removed to the other room and packed in wooden barrels in direct contact with broken ice. The barrels were covered with pieces of burlap cut from old sacks which had been used many times and were very dirty. The barrels were second hand ones which had been collected from grocery stores or similar places, but had not been used before for the shipment of clams. Most of these clams go to the New York market.

The shore surrounding both shipping houses was covered with shells, making a porous surface, so that no pools of water collected around the buildings. The decomposed meat in the shells and the garbage cast out from neighboring dwellings attracted numerous

flies. A small stream which flows through the back yards of about twenty-five properties enters the river only a few feet above the bins and floats in which Mr. Taylor keeps his clams. The bed of this stream is covered with several months' accumulation of rubbish, and the stream receives the waste material from all the dwellings located along its banks. An inspection of the shores of the river showed that nearly all the houses above the bridge across the river at Highlands sewer directly into the river, as do also all of the amusement pavilions at Highland Beach.

Samples were collected of the clams taken to these shipping houses, and of the open clams after they had been prepared for shipment. An examination of these samples at the laboratory showed that they were of a satisfactory quality, judged by the bacteriological content, when taken from the bed of the river, but that a serious pollution occurred during the opening and handling in the shipping houses. These inspections show very clearly that the methods of handling and opening clams which now obtain in this vicinity are entirely improper and result in a serious deterioration of the product.

Red Bank. Inquiries made at Red Bank showed that no oysters were taken from the river during the summer, but it was stated that some are gathered after September 1st. These oysters are brought from other beds and planted in the river, but the total output is small, and the industry at that point is diminishing in importance.

Arthur Kill and Upper Raritan Bay. Inquiries made in this vicinity showed that no clams or oysters are being taken at the present time from the Raritan river for direct consumption. According to statements made by oyster dealers, it appears that the once somewhat extensive oyster industry in the Upper Raritan bay has been almost ruined by the increase in the quantity of polluting materials which are being discharged into the waters of the Arthur Kill and the Raritan river. It is stated that the pollution of these waters has increased to such an extent that the oysters are not only rendered unfit for human consumption, but that they are dying rapidly from the effects of the pollution, especially oysters that are brought from other beds and planted in these waters. Most of the dealers who formerly planted oysters in this vicinity are abandoning their beds, and it appears that the oyster industry at this point may soon cease to exist.

Cheesequake Creek. Inspections made at this point during the summer show that at least eight oyster dealers are floating oysters in the upper waters of Cheesequake creek, and that altogether about thirty floats are operated in this creek. Most of these oysters are brought from Long Island sound, and are taken direct to the creek for floating before they are moored, or are planted in Prince's bay for a period of two or three months. Statements were made by oystermen in that vicinity that this creek was the only one along the shore the waters of which were sufficiently pure to make it possible to float oysters. No samples as yet have been collected from this vicinity, but it is purposed to make an examination of this creek during the coming year.

Keyport. An inspection made in October at Keyport showed that there were four dealers who purchase oysters in the Chesapeake bay and plant them in Raritan bay about one mile off shore, where they are left for a period of from one to six months. They are then floated for one or more tides in the creek back of Keyport, and shipped in the shell. Some of these oysters go to New York, but most of the output goes to summer resorts along the New Jersey shore. These oysters are gathered only during the months of June, July, August and September. Another dealer who obtains his oysters from beds located near Keyport, ships in the shell to various points in New Jersey, from September 1st to December 15th, and also during about a month in the spring. These oysters are also floated in the same creek for a period of one or more tides.

In addition to the oysters shipped in shell from Keyport, a large shucking house is operated by J. & J. W. Ellsworth Company. This concern shucks about eight hundred bushels of oysters per day during the season, and obtains their oysters from the south side of Staten Island. These oysters, or some of them, are floated in Cheesequake creek before being shucked. After shucking they are shipped in pails not in contact with ice. An inspection was made of the sanitary conditions in the shucking house, and these were found to be satisfactory.

Newark. An investigation was also made of the habits of certain dealers who bring shell oysters up the Hackensack and Passaic rivers in boats and sell them in Newark and Passaic. It appears that these oysters are obtained in Jamaica bay, and are brought to this State by the persons who gather them. Samples of these oysters will be collected in the near future.

Before any adequate study of the sanitary side of the oyster industry in this State can be made, it will be necessary for the Legislature to provide sufficient funds to pay the salaries and expenses of at least one inspector and a bacteriologist. It is estimated that this will cost about \$5,000 per annum. In addition a motor boat will be needed for the inspector, of sufficient size and seaworthiness to make short trips on the ocean in fair weather, and of sufficiently light draught to navigate the shallow waters in which many of our oysters are grown. Some laboratory facilities must be provided on such a boat, and it is probable that its upper works at least would have to be built specially with this end in view. With one man in the field in a suitable boat all the time, and the bacteriologist dividing his time between field and laboratory work, much could be accomplished in the direction of locating and abating sources of pollution and in discovering and condemning oyster and clam grounds, the shellfish from which are liable to infection. Under present conditions we can do little to safeguard the consumer against the possibility of infection by contaminated oysters.

INSPECTION OF SLAUGHTER HOUSES.

In the annual report for 1910 is a short account of the attempt of this division to enforce the slaughter house license act (chapter 295 of the laws of 1910). The work done during 1910 was necessarily of a preliminary character, because the law was new and also because it was necessary to obtain accurate information regarding conditions existing in the State before much systematic work could be attempted. Then, too, the inspections had to be made by persons not particularly well versed in slaughter house practise. During 1911 the services of a veterinarian were secured, who had had considerable experience in meat inspection in the service of the Bureau of Animal Industry, and who by reason of this experience was particularly well fitted to undertake the supervision of slaughter houses. During 1911 much progress has been made in inspecting slaughter houses and in correcting improper conditions found to exist in them. The following table shows in detail the number of places inspected, the number of inspections made in each, and the conditions found:

TABLE 8.—SHOWING LOCATION AND CONDITION OF SLAUGHTER HOUSES.

LOCATION.	NAME OF OPERATOR.	Number.	Number of Inspections.	Condition, First Inspection.	Changes Recommended.	Recommendations Complied With.	Condition on Reinspection.	License Granted.
Atlantic County—								
Atlantic City	Jesse Taylor Sons & Co.	302	2	good	no	good	yes	
"	Vestoff & Levitsky Co.	365	1	bad	yes		no	
"	Z. Waldmann	366	1	bad	yes		no	
"	Schildhorn & Hammer	367	1	bad	yes		no	
"	Jacob Levittsky	368	1	bad	yes		no	
"	Nathan Levine	442	1	bad	yes		no	
Egg Harbor City	George Oberfell	413	1	fair	yes		no	
"	William Oberfell	314	1	fair	yes		no	
"	Fred Schwenger	315	1	fair	yes		no	
Folsom	Jacob Eckhardt	126	0				no	
Hammonton	M. L. Jackson & Son	127	1	bad	yes		no	
"	Joe Russo	128	1	bad	yes		no	
"	Pietro Coro	129	0				no	
"	Rocco Ruberto	130	0				no	
Somers Point	Charles White	309	0				no	
"	Pedar Tunkelson	307	0				no	
Bergen County—								
Englewood	F. J. Howell	193	0				no	
Fairview	Louis Beck	272	2	bad	yes	partly	fair	no
Garfield Park	Joseph Fein	245	0	bad	yes	no	bad	no
Hackensack	A. L. Lenz	139	0				no	
Little Ferry	William Weleck	472	0				no	
Lodi	Christopher Davis	271	0				no	
Oakland	Henry Van Schke	476	1	bad	yes		no	
Tenafly	H. E. MacNomer	487	0				no	
"	Samuel Sabin	110	2	bad	yes	partly	fair	no
Burlington County—								
Bordentown	John Matthews	320	0				no	
"	William Warner	321	0				no	
"	Phillip Matthews	312	0				no	
Bridgeboro	William F. Kanderer	216	1	good	no		yes	
Columbus	Albert Price	318	0				no	
Crosswicks	Willet Satterthwaite	236	0				no	
"	Zedekiah McCabe	237	0				no	
Dobbin Station	George Paul	319	0				no	
Florence	Dougherty & Stackhouse	254	0				no	
"	Paris Ormin	295	0				no	
"	Charles Smith	296	0				no	
Lewistown	Lewis Mantel	242	1	bad	yes		no	
Marton	John Lieberman	312	0				no	
Medford	Braddock & Reeve	262	0				no	
"	Robert Henderson	263	1	fair	yes		no	
"	Samuel X. Lamb	264	0				no	
"	Philip Karg	325	0	bad	yes	yes	good	no
"	John Jobs	326	1	fair	yes		no	
"	Charles F. Parker	327	0				no	
"	John Worth	485	1	good	no		yes	
Pemberton	W. W. Lippincott	3-9	0				no	
"	Montgomery & Ballinger	384	0				no	
Riverside Township	Jacob Lusch	172	0				no	
"	William Sarstad	173	1	bad	no		no	
Vincetown	George Abrams	154	1	bad	yes		no	
"	Eugene O. Haines	155	1	fair	yes		no	
Camden County—								
Blackwood	W. E. Rudderow	319	0				no	
Camden	D. D. Helms Sons	198	3	poor	yes	yes	good	yes
"	Leonard Hoffman	197	0				no	
"	Schlerer & Zink	200	3	good	no		good	yes

TABLE 8.—SHOWING LOCATION AND CONDITION OF SLAUGHTER HOUSES—
Continued.

LOCATION.	NAME OF OPERATOR.	Number.	Number of Inspections.	Condition, First Inspection.	Changes Recommended.	Recommendations Complied With	Condition on Reinspection.	License Granted.
Camden County—Con.								
Camden	Fred Banzhoff	201	0	fair	yes	yes	good	yes
"	Howard Jaggard	245	0				no	
Clementon	E. G. Firth	350	0				no	
Greenloch	Harry Harper	351	0				no	
Kirkwood	Frank Henderson & Son	192	1	bad	yes		no	
Haddonfield	Isaac Ellis & Son	156	2	fair	yes	yes	good	yes
"	Samuel Hunt	157	0	bad	yes		no	
Lindenwald	William Kammer	182	0				no	
"	Braddock Bros.	183	0				no	
"	Henry Sturburg	184	0				no	
National Park	Lentz Bros.	109	1	bad	yes		no	
Berlin	Thomas Bray	150	0				no	
"	James Clark	153	0				no	
Cape May County—								
Cape May Court House	J. S. Willis	246	0				no	
"	Joseph Levine	247	0				no	
Cold Spring	McPherson Bros	303	0				no	
Erma	F. E. Platt	304	0				no	
Rio Grand	William Harris	247	0				no	
Woodbine	Woodbine Beef Co.	306	0				no	
"	Max Potachmick	438	1	bad	no		no	
Cumberland County—								
Bridgeton	G. H. Barth	112	0				no	
"	H. Silbermann	381	1	bad	no		no	
"	Venezky & Son	382	1	bad	yes		no	
"	Oscar L. Hirschner	422	1	bad	no		no	
"	John J. Dixon	446	1	bad	no		no	
"	Thomas W. Platt	445	1	bad	no		no	
Carmel	Samuel Clearfield	230	0				no	
"	Harry Carter	401	0				no	
"	Herman Cutler	412	1	bad	yes		no	
Cedarville	B. Frank Burt	305	1	bad	yes		no	
Deerfield	Thomas M. Tice	400	1	bad	yes		no	
Mauricetown	Theodore Fisher	261	0				no	
Millville	Whitall Tatum Co.	227	2	fair	yes	yes	good	yes
"	Valentine Schlaacter	228	2	fair	yes	yes	good	yes
"	Jacob Fisher	229	0				no	
North Vineland	William Shoemaker	244	2	filthy	no		no	
Shiloh	Wayde G. Allen	447	1	bad	no		no	
Vineland	Shen & Trainman	243	0				no	
"	Marshall & Crossman	245	1	bad	yes		no	
Essex County—								
Newark	Beck & Canfield	353	2	bad	yes	yes	good	yes
"	John Englehorn	354	1	good	no		yes	
"	Simon Hauser & Son	355	2	bad	yes	no	bad	no
"	Emil Kohn	356	3	fair	yes	yes	good	yes
"	Maybaum & Sons	357	3	bad	yes	yes	fair	yes
"	Schloss, Heid & Schloes	358	0				no	
"	Benjamin Novick	411	1	filthy	yes		no	
"	A. Hollender & Son	448	1	filthy	yes		no	
"	Benjamin Stein	453	1	filthy	yes		no	
Caldwell	Chris Sengling	234	2	bad	yes	yes	good	yes
"	Louis Sengling	235	0				no	

TABLE S.—SHOWING LOCATION AND CONDITION OF SLAUGHTER HOUSES—
Continued.

LOCATION.	NAME OF OPERATOR.	Number.	Number of Inspections.	Condition, First Inspection.	Changes Recommended.	Recommendations Complied With.	Condition on Reinspection.	License Granted.
Gloucester County—								
Bridgeport	H. McGilney & Bro.	170	1	bad	yes		no	
Ewan	Benjamin Carr	337	1	bad	yes		no	
Franklinville	H. Nathan	371	0				no	
Harrisonville	John W. Riley	335	1	bad	yes		no	
Mantua	Lewis Robinson	238	0				no	
Mullica Hill	George Madera	336	0				no	
Paulsboro	Charles Northuaige	104	0				no	
Sewell	Joseph Bailey	105	0				no	
	Harry Berry	239	1	bad	yes		no	
	William Jenkins	240	0				no	
	Oscar Carter	241	1	bad	yes		no	
Swedesboro	Theodore B. Hurff	103	1	bad	no		no	
Williamstown	Mrs. Jacob Suter	394	1	fair	no		no	
Hudson County—								
Guttenberg	Fisher & Co.	473	0				no	
Jersey City	Jersey City Stock Yards Co.	474	0				no	
	Nagle Packing Co.	475	0				no	
Kearny	Swift & Co.	374	3	fair	yes	yes	good	yes
	Bimblar, VanWageningen & Co.	373	1	good	no		yes	
	Schwarz Bros. Co.	486	3	bad	no		bad	no
North Bergen Township	Chas. Miller & Co.	376	1	good	no		yes	
West New York	West New York Packing Co.	352	0				no	
Hunterdon County—								
Annandale	A. Lewis Ramsey	416	1	fair	yes		no	
	Louis E. Merrill	418	0				no	
Calton	Samuel Neigh	100	1	bad	yes		no	
Clinton	S. G. Langer	123	2	filthy	yes	no	filthy	no
	J. V. Aller	123	2	bad	yes	partly	fair	no
Everettstown	Harry Warner	391	2	fair	no		good	yes
Frenchtown	William Loper	344	1	fair	no		no	
	L. M. Hoffman & Son	345	1	fair	yes		no	
	S. Frank Opdyke	346	1	fair	yes		no	
Holland	Charles Ulmer	187	1	fair	yes		no	
Lambertville	Hull & Beach	392	2	bad	yes	yes	good	yes
Lineville	Charles Ely	218	0				no	
Lebanon	Harry E. Lambert	294	2	filthy	yes	no	filthy	no
Milford	Elmer E. Culver	186	2	fair	no		good	yes
	S. C. Childs	471	1	fair	yes		no	
Mt. Pleasant	Robbins & Hoppock	188	2	bad	yes		no	
Patterson	J. S. Gano	386	1	fair	yes		no	
Pittstown	S. R. Reed	270	1	bad	yes		no	
Ringoes	Ryder H. Hill	217	1	bad	yes		no	
	William Hartpence	219	1	bad	yes		no	
Raven Rock	Clark B. Johnson	411	0				no	
Rosemont	Jos. A. Melick & Son	404	2	bad	no		bad	no
Sergeantsville	J. J. Rittenhouse	120	2	bad	yes	partly	fair	no
Stockton	William Furling	364	1	fair	yes	partly	fair	no
	John L. Reed (retired)	121	1	bad	yes		no	
	Lambert D. Matthews	402	2	fair	no		fair	no
Mercer County—								
Harbourton	William Hart	143	0				no	
Hightstown	J. P. Buck	106	0				no	
	William F. Dillatosh	107	0				no	
	William A. Girton	108	0				no	
	Alonzo Day	160	0				no	
Hopewell	Andrew Wykof	169	0				no	

TABLE S.—SHOWING LOCATION AND CONDITION OF SLAUGHTER HOUSES—
Continued.

LOCATION.	NAME OF OPERATOR.	Number.	Number of Inspections.	Condition, First Inspection.	Changes Recommended.	Recommendations Complied With.	Condition on Reinspection.	License Granted.
Mercer County—Con.								
Etra	Simon Yakomb	161	0				no	
Lawrence Township	Andrew F. Stout	311	0				no	
Pennington	Charles Leaming	309	0				no	
	Geo. O. Atwood	310	0				no	
	Benj. F. Taylor	308	0				no	
Princeton	Al Leigh	174	0				no	
Princeton Township	Wm. H. Hahn	220	0				yes	
Trenton	Wagner & Meyers	286	3	bad	yes	yes	good	no
	Chas. Wagner	287	2	bad	yes		bad	no
	Jacob L. Kates	288	2	fair	yes	yes	good	yes
	A. Hohnovitz	289	4	bad	yes	yes	good	yes
	Fred Keteer	290	2	bad	yes		no	
	Fred Weckerlin	291	0				no	
	Fred Neuner	292	2	bad	yes		bad	no
	Jos. Berger	317	6	bad	yes	partly	bad	no
	Goldsmith & Stein	293	6	bad	yes	partly	bad	no
	Samuel Rosenthal	419	4	fair	yes	partly	fair	no
	G. Levinson	477	1	bad	yes		no	
	Jacob Lampart	480	1	bad	yes		no	
	John A. Hartman	481	1	bad	yes		no	
Middlesex County—								
Cranbury	Jeremiah Murphy	211	0				no	
	E. C. Wilson	212	0				no	
	Chas. W. Stout	324	1	bad	yes		no	
Dayton	Thomas Conover	323	0				no	
Jamesburg	Mr. Mount	438	0				no	
Milltown	Wm. Glock	142	1	bad	yes		no	
	Martin Muller	297	0				no	
New Brunswick	Samuel Lederer	444	3	bad	yes	yes	good	yes
	Morris Hann	484	2	filthy	yes	no	filthy	no
Monmouth Junction	Ed. Van Dyke	322	2	fair	yes		good	yes
Spotswood	Michael Nelsonoff	414	2	bad	yes	partly	fair	no
Perth Amboy	Abraham Wertheim	113	3	bad	yes	yes	good	yes
	Max Fogel	460	3	fair	yes	yes	good	yes
Monmouth County—								
Adelphia	Charles Bearmore	255	0				no	
	Jos. Erickson	256	0				no	
Allentown	J. H. Pierce	285	0				no	
Belmer	Frank Cohen	299	0				no	
	Samuel Sierstein	288	1	bad	yes		no	
Eatonstown	Jos. Miller	359	3	bad	yes	partly	fair	no
Englishtown	David R. Richmond	115	2	bad	yes	partly	fair	no
	Clayton Palmer	116	2	bad	yes	partly	fair	no
	John Tafel	385	1	bad	yes		no	
	George Clayton	496	0				no	
Howell	David Erickson	254	0				no	
Inlaystown	Wm. Perant	117	0				no	
	Paul Clayton	118	0				no	
Freehold	Samuel Sagotsky	487	0				no	
	J. M. Johnson & Son	189	0				no	
Marlboro	H. G. Magee	205	2	bad	yes	no	bad	no
Matawan	H. A. Egan	461	1	bad	yes		no	
Milhurst	Samuel Zlotkin	276	2	bad	yes	yes	good	yes
Morganville	Frank Linzmayer	206	2	bad	yes	no	bad	no
Neptune Township	Abraham Schlosbach	124	0				no	
	Asher White	125	2	fair	yes	partly	fair	no
Oceanport	L. Shapiro	380	2	fair	yes	yes	good	yes
Shrewsbury	R. Marx	101	3	bad	yes	partly	bad	no
Tennent	Travonia Bennett	102	0				no	
	Samuel Berkowitz	273	2	bad	yes	no	bad	no

TABLE 8.—SHOWING LOCATION AND CONDITION OF SLAUGHTER HOUSES—
Continued.

LOCATION.	NAME OF OPERATOR.	Number.	Number of Inspections.	Condition, First Inspection.	Changes Recommended.	Recommendations Complied With.	Condition on Reinspection.	License Granted.
Morris County—								
Butler	Howard Tintle	377	0	no	no	no	no	no
"	Fredericks & Post	378	0	no	no	no	no	no
"	Herbert Kingsland	379	0	no	no	no	no	no
"	J. Glode	380	0	no	no	no	no	no
Dover	John B. Richards	453	1	bad	yes	no	no	no
Flanders	Harry Read	154	0	no	no	no	no	no
"	Watson Huff	234	0	no	no	no	no	no
German Valley	Daniel Fleming	241	0	no	no	no	no	no
"	Geo. Lance	222	0	no	no	no	no	no
Green Village	John Weber	259	0	no	no	no	no	no
Madison	Miller Bros.	363	0	no	no	no	no	no
"	Morris Co. Beef Co.	453	0	bad	yes	no	no	no
Mendham	Chas. Day	430	0	no	no	no	no	no
Morristown	Max Mintz	210	0	no	no	bad	no	no
"	Wm. Howlet	260	2	bad	yes	no	bad	no
Pequanock	Geo. R. French	309	0	no	no	no	no	no
Stanhope	Geo. P. Hart	223	0	no	no	no	no	no
Stirling	J. M. Holmes, Jr.	257	0	no	no	no	no	no
"	Chas. Michals	258	0	no	no	no	no	no
Washington Valley	Samuel Smith	431	2	bad	yes	no	bad	no
Ocean County—								
Manahawkin	John Cramer	233	0	no	no	no	no	no
Mayetta	S. Budd Cramer	223	0	no	no	no	no	no
New Egypt	Samuel Robbins	144	0	no	no	no	no	no
"	Mantel Bros.	145	0	no	no	no	no	no
"	Elmer Erick	146	0	no	no	no	no	no
Tuckerton	N. S. Jones	281	0	no	no	no	no	no
"	Thos. Cole	283	0	no	no	no	no	no
Passaic County—								
Haledon	Alex. Gaiz	316	0	no	no	no	no	no
Little Falls	Mike Levenstein	361	2	bad	yes	no	bad	no
Macopin	Richard Brower	208	0	no	no	no	no	no
Paterson	Henry Muhs Co.	166	1	good	no	good	yes	no
"	D. Fullerton Co.	167	1	good	no	good	yes	no
"	Paul Mazy	168	3	bad	yes	yes	good	yes
"	Israel Oremson	488	1	bad	yes	no	no	no
Newfoundland	Thos. Mickins	207	0	no	no	no	no	no
Prospect Park	Walter Pinksma	196	0	no	no	no	no	no
"	Albert Algera	197	0	no	no	no	no	no
Totowa	Max Levenstein	363	2	bad	yes	yes	good	yes
Salem County—								
Alliance	Isaac Steinsnyder	440	1	bad	yes	no	no	no
Alloway Township	J. W. Dunham	203	1	fair	yes	no	no	no
"	Alloway Supply Co.	204	0	no	no	no	no	no
Elmer	Abram Botwick	424	1	bad	yes	no	no	no
"	Cremor Bros.	425	1	bad	yes	no	no	no
Monroeville	Engene McFarland	164	1	bad	yes	no	no	no
"	Wm. Glick	570	0	no	no	no	no	no
"	Louis Krechner	428	1	bad	yes	no	no	no
Norma	Lewis Fisher	439	1	bad	yes	no	no	no
Pedricktown	Cawley & Green	181	0	no	no	no	no	no
Salem	Bonham & Young	338	0	bad	yes	no	no	no
"	Wm. Bichart	339	0	bad	yes	no	no	no
"	Salem Supply Co.	340	0	no	no	no	no	no
"	Robert P. Breslin	435	1	bad	yes	no	no	no
"	J. H. Stretch	436	1	bad	yes	no	no	no
"	Waddington & Lounsbury	437	1	bad	yes	no	no	no
Sharptown	H. H. Root	128	1	bad	yes	no	no	no
Woodstown	Dixon & Moncreef	137	1	bad	yes	no	no	no

TABLE 8.—SHOWING LOCATION AND CONDITION OF SLAUGHTER HOUSES—
Continued.

LOCATION.	NAME OF OPERATOR.	Number.	Number of Inspections.	Condition, First Inspection.	Changes Recommended.	Recommendations Complied With.	Condition on Reinspection.	License Granted.
Somerset County—								
Belle Mead	Edgar Cain	348	0	no	no	no	no	no
East Millstone	John M. Garretson	119	0	no	no	no	no	no
Martinsville	John Van Nest	388	2	bad	yes	no	fair	no
"	William Henry	389	0	no	no	no	no	no
"	John Mundy	390	2	bad	yes	no	bad	no
Neshanic Station	L. Rynearson	171	0	no	no	no	no	no
"	Molbus & Co.	302	0	no	no	no	no	no
North Branch	Frank C. Williams	300	0	no	no	no	no	no
Skillman	Saul Levine	301	0	no	no	no	no	no
"	H. A. Duryea	347	0	no	no	no	no	no
Somerville	Geo. Anton	213	0	no	no	no	no	no
"	Edward Kinsey	214	1	bad	yes	no	no	no
Bridgewater Township	John Van Nest	396	0	no	no	no	no	no
Warrenville	Fred Kipsev	494	0	no	no	no	no	no
Sussex County—								
Andover	James Sutor	223	0	no	no	no	no	no
"	Oscar Hovey	224	0	no	no	no	no	no
"	W. K. Longcor	269	2	bad	yes	partly	fair	no
"	Andrew L. Dobbins	141	0	bad	no	no	no	no
Branchville	John A. Johnson	280	2	bad	yes	partly	bad	no
"	Martin Reed	281	1	fair	yes	no	no	no
Franklin Furnace	Jos. Kornhiser	449	0	no	no	no	no	no
Glenwood	W. Foshes	131	2	bad	yes	no	bad	no
"	Abner Vesley	132	2	bad	yes	no	bad	no
"	Alvah Green	429	0	no	no	no	no	no
Hamburg	Oakley Myers	162	0	no	no	no	no	no
"	Harry Reed	163	2	bad	yes	partly	bad	no
"	George Mills	426	1	bad	yes	no	no	no
"	Phenivus Pellington	450	0	no	no	no	no	no
Huntsville	A. Hull	268	0	no	no	no	no	no
McAfee	Charles Summis	132	2	bad	yes	partly	bad	no
Newton	E. N. Wyker	178	2	bad	yes	partly	fair	no
"	Wm. Vickers	373	0	no	no	no	no	no
"	Erving Kishpaugh	470	1	fair	yes	no	no	no
Lafayette	Henry Verneille	179	2	bad	yes	no	bad	no
"	Fred M. Pellet	180	2	bad	yes	no	fair	no
"	Frank Lockburn	410	2	bad	yes	partly	bad	no
Sparta Township	Norman Search	249	0	no	no	no	no	no
"	Robert Lantz	250	0	no	no	no	no	no
"	Peter Hammel	251	0	no	no	no	no	no
"	Jacob Goble	252	0	no	no	no	no	no
"	James Goble	253	0	no	no	no	no	no
Stockholm	John L. Reed	121	1	bad	yes	partly	fair	no
Tranquility	Geo. M. Lewis	267	2	bad	yes	partly	fair	no
Quarryville	Mathias S. Rogers	421	3	bad	yes	no	bad	no
Sussex	Jacob Martin	134	3	bad	yes	partly	fair	no
"	Amza Ayers (retired)	302	0	no	no	no	no	no
"	Wm. H. Johnson	432	0	bad	no	no	no	no
"	John Bedell	433	3	bad	yes	no	bad	no
"	R. Dugdale	466	2	bad	yes	no	bad	no
"	Clarkson Potter	467	1	fair	yes	no	no	no
Union County—								
Elizabeth	Max Charles	140	0	no	no	no	no	no
"	Charles Feldman	141	0	no	no	no	no	no
Linden	Cohen & Berman	478	2	bad	yes	yes	good	yes
Plainfield	Ernest T. Hand (retired)	150	3	bad	yes	no	bad	no
Roselle Park	John Kessler	185	1	fair	yes	no	no	no
"	John Bender	136	2	fair	yes	no	bad	no

TABLE 8.—SHOWING LOCATION AND CONDITION OF SLAUGHTER HOUSES—
Continued.

LOCATION.	NAME OF OPERATOR.	Number.	Number of Inspections.	Condition, First Inspection.	Changes Recommended.	Recommendations Complied With.	Condition on Reinspection.	License granted.
Warren County—								
Blairstown.....	Lester Huff.....	265	2	bad	yes	partly	bad	no
	M. C. Hartman.....	427	2	bad	yes	.....	bad	no
Belyidere.....	Herman Richards.....	278	2	bad	yes	.....	bad	no
	Roseberry Bros.....	259	0	.....	.....	.....	.....	no
Columbia.....	Frank Brands.....	398	0	.....	.....	.....	.....	no
Hackettstown.....	Rice & Deremer.....	149	2	bad	yes	.....	bad	no
	Klotz & Ackley.....	341	2	bad	yes	.....	bad	no
	Geo. Rodda.....	343	0	.....	.....	.....	.....	no
Hainesburg.....	Ogden B. Brands.....	397	1	fair	yes	.....	.....	no
Hope.....	Chas. Westbrook.....	147	1	bad	yes	.....	.....	no
	F. T. Smith (retired).....	148	0	.....	.....	.....	.....	no
Marksboro.....	Edward Rice.....	194	1	bad	.....	.....	.....	no
	John Kishpaugh.....	195	1	bad	yes	.....	.....	no
New Village.....	Joseph Paena.....	331	2	bad	yes	yes	good	yes
Oxford.....	Daniel Pettinger.....	277	2	bad	yes	no	bad	no
Oxford Furnace.....	Empire Steel and Iron Co. (retired).....	393	1	bad	yes	no	.....	no
Phillipsburg.....	Wilson Croner.....	490	1	fair	yes	.....	.....	no
Townsbury.....	Edward H. Morgan.....	177	0	.....	.....	.....	.....	no
Vienna.....	John Lamosson.....	173	1	fair	yes	.....	.....	no
	Lewis E. Merrill.....	176	1	bad	.....	.....	.....	no
	Edward Morgan.....	417	0	.....	.....	.....	.....	no
Washington.....	Clark Shafer & Son.....	151	1	fair	yes	.....	fair	no
	Hance Bros.....	387	2	fair	yes	.....	.....	no
	Wm. Mowder.....	489	1	bad	yes	.....	.....	no

A summary of the above table, showing in concise form what has been done during the year, is stated in table 9, which follows:

TABLE 9.—SHOWING THE NUMBER OF INSPECTIONS AND THE CONDITIONS OF SLAUGHTER HOUSES THROUGHOUT THE STATE.

	Slaughter houses.	Visits.
Number found in good condition on the first inspection.....	9	
Number found in fair condition on the first inspection.....	41	
Number found in bad condition on the first inspection.....	136	
Number found in a filthy condition on first inspection.....	7	
Number retired, condition not reported.....	2	
Total number inspected.....	195	
Number on record which have not been inspected.....	157	
Total number on record.....	352	
Number of slaughter houses in which changes were recommended.....	164	
Reinspections showing all recommendations complied with.....	25	
Reinspections showing recommendations partly complied with.....	23	
Reinspections showing no recommendations complied with.....	24	
Licenses granted.....	36	
	Slaughter houses.	Visits.
Number of slaughter houses inspected once.....	102	102
Number of slaughter houses inspected twice.....	71	142
Number of slaughter houses inspected three times.....	18	54
Number of slaughter houses inspected four times.....	2	8
Number of slaughter houses inspected six times.....	2	12
Totals.....	195	318
Condition of slaughter houses on last inspection:		
Good.....		30
Fair.....		20
Bad.....		40
Filthy.....		3

Inspection of slaughter houses in this State shows that many of them are not provided with an adequate water supply. In some places water is carted in pails or other vessels for distances of three hundred yards or more, and at some of these places no vessels which could be used for hauling water could be discovered. It is evident that the use of adequate amounts of water for cleansing purposes under these conditions entails so much labor that it is seldom done. In many cases waste liquids are permitted to flow into hog troughs adjoining the slaughter houses; in other cases,

waste fluids are permitted to flow on the ground, and in some instances such liquids drop through the leaky floors of the slaughter house and form putrefying pools under the buildings. In many of the slaughter houses the floors were constructed of rough boards, the crevices between which were filled with decomposing blood and filth. Sidewalls were found constructed of rough boards which were incrustated with dried blood and filth. Even where the sidewalls were of smooth and impervious material, in many instances, they were exceedingly dirty. This was usually found to be the case where the supply of water was inadequate or so located as to be difficult of access. Ceilings in many cases were rough and were permitted to accumulate dust and cobwebs.

In nearly all the slaughter houses inspected during the fly season, large numbers of flies were present in and around the buildings. The accumulation of filth and offal which is permitted around many of these buildings affords excellent opportunities for flies to breed, and they have free access to the meats through the unscreened windows of the slaughter houses. Meat exposed to the depredations of flies in this manner cannot fail to be impaired in quality, as the flies undoubtedly deposit large numbers of putrefactive bacteria thereon. In warm weather blow flies also infest slaughter houses in large numbers, and lay their eggs, which hatch out into maggots within a few hours, in any meat to which they have access. It is, therefore, very important that tightly fitting screens be provided for all openings in slaughter houses, and it is equally important that refuse material in which flies may breed be not permitted to accumulate in the vicinity.

Another improper practise indulged in by many operators of slaughter houses in the State is the keeping of hogs in pens immediately adjoining the slaughter houses. Into these hog pens the offal from the slaughter houses is thrown for the hogs to eat, and blood and wash water from the floors is furnished to them to drink. This always results in an intolerable nuisance, as a hog pen operated in this manner must necessarily be always in filthy condition, and the putrefying semi-liquid mass of mixed earth and offal which covers the ground forms an excellent breeding place for flies. In many places manure piles are also maintained, which likewise afford breeding places for flies. Such manure piles usually contain considerable quantities of offal, the decomposition of which results in the emission of foul odors. At one place in-

spected during the summer, over ten wagon loads of offal consisting of stomachs, lungs, intestines, stomach contents and similar material was found in a pile immediately adjoining a slaughter house. This represented an accumulation of several months. The pile was alive with maggots, about four bushels of maggot shells being visible. The odor in the vicinity of this establishment was almost unendurable. The building was unscreened and animals were slaughtered within it and the dressed meat permitted to hang uncovered and without any protection for hours. Numerous other objectionable conditions were found, but those above cited will serve to indicate the habits of many of our slaughter house operators.

In order that slaughter houses may comply with the requirements of law and may be operated in such a manner that a clean and wholesome product will be assured, it is believed that they must at least comply with the following requirements:

1. Whenever possible, city water should be piped into the buildings and conveniently located outlets should be provided to which hose can be attached. If city water cannot be obtained, a pump drawing water from some unpolluted source and provided with a hose attachment should be located within the building. In such cases, an elevated tank for the storage of water is recommended. Any system of obtaining water which involves carrying it to the slaughter house in pails, barrels or other containers is not adequate, and will not be approved.

2. The floors of slaughter houses should be laid with such a slope that quick drainage will be secured, and the floor drain should be trapped and connected with a public sewage system, wherever possible, by means of an iron or tile drain properly laid. If an outlet cannot be had into a sewer, a properly constructed covered cesspool should be provided, so located that it is not liable to cause contamination of the source of water supply. Under no circumstances will the sewage from a slaughter house be permitted to flow into a stream or upon the surface of the ground.

3. The floors of slaughter houses, in order to comply with the law, must be made of some smooth, impervious material which is tight and can be flushed and washed clean with water. Cement floors are recommended in all cases, and insisted upon in new slaughter houses. Where existing wooden floors are tight, smooth and properly sloped, their use will be permitted.

4. The side walls of killing rooms must be faced to a height of at least five feet with smooth material which is impervious to water, and which can be readily cleansed. Cement is recommended. Sheet metal is also sometimes used. In existing slaughter houses, a siding of smooth matched boards, if the cracks are filled and the whole surface well covered with oil paint, will be permitted.

5. Pens for hogs not intended for immediate slaughter must not be maintained within one hundred feet of a slaughter house.

6. Hogs must not be feed upon slaughter house offal or refuse, unless it has been sufficiently cooked to sterilize it, and in no case must more than one-third of the ration of hogs be made up of such refuse. The feeding of raw slaughter house refuse is a frequent cause of disease in hogs. Among the diseases which hogs are known to contract in this manner are tuberculosis, hog cholera and trichinosis. Many varieties of tape worms are distributed if hogs are permitted to eat slaughter house refuse, the hog being the intermediate host.

7. Manure and offal must not be permitted to accumulate in the vicinity of slaughter houses, but must be removed daily.

8. If rendering is done, it must be performed in rooms separate and apart from the killing room, and rooms where edible products are stored or handled.

9. The manufacture of edible meat products will not be permitted in killing rooms.

10. During the fly season, all openings in slaughter houses must be properly screened, and all screen doors and windows must be kept closed.

11. Whenever dressed meats are kept in the slaughter house longer than twelve hours, adequate refrigeration must be provided.

12. All meat must be thoroughly protected from flies.

Because of space limitations it is not possible to describe all the slaughter houses inspected. A few descriptions of slaughter houses are given below as illustrations of the conditions which exist in the various kinds of abattoirs located in the State.

John Bender, Roselle, Union County. At this house about 250 lambs, 80 calves and 90 hogs are killed per week. The slaughter house was found on first and second inspections to be in a filthy condition. The floors were very dirty, no screens were provided. Open doors and windows permitted the entrance of flies and of offensive odors from the hide room and from out doors into the killing and hanging rooms. The odor in the vicinity of the slaughter house was very offensive. Pieces of meat hanging in the killing room were completely covered with flies. The floor was littered with putrefying viscera, which emitted foul odors. The sewer connection was imperfect, permitting blood and waste liquids to drain onto the ground under the killing floor where it was churned into mud by hogs. This putrefying mass of filth was a breeding place for flies, and was filled with maggots at the time of inspection. A hog-pen immediately adjoined the slaughter-house, and hogs had free access to the space beneath the killing floor. Refuse material was fed to these hogs at times. Facilities were provided for making hot water, and the water supply was abundant. There was, therefore, no excuse for the extreme uncleanliness observed.

After the first inspection certain changes were recommended, but these changes were not complied with. After the second inspection notice was served on the owner that if this slaughter-house was not so repaired and cleansed as to bring it in compliance with the law, prosecution would follow.

Herman Richards, Belvidere, Warren County. This slaughter-house is built of concrete. Many defects were discovered in its construction and management. The killing room was full of flies. The odor about the plant was exceedingly offensive, a hog-pen just outside the slaughter-house was littered with viscera, bones, and blood in all stages of putrefaction. Inside the killing rooms were several barrels of inedible grease and cracklings which emitted foul odors. At the time of inspection calves were being dressed in the killing room. Notice was served on the owner that certain changes would have to be made in order that he might comply with the law.

Abner Vealy, Glenwood, Sussex County. At the time of the first inspection this slaughter-house was in course of construction. When a second inspection was made, four months later, the building was completed, but there was no water nearer than two hundred feet. No cesspool was provided. Although the owner was conducting the business of slaughtering calves, he was not killing them in his slaughter-house, which was apparently kept for exhibition purposes. Upon investigation it was found that calves were being slaughtered in the open air in an orchard about three hundred yards from the slaughter-house. Animals killed at this place are exposed to flies, and fly-blown carcasses and carcasses containing maggots have been found which were shipped by the owner of this slaughter-house.

At the time of the third inspection, some four months after the second, the slaughter-house was still being used chiefly for exhibition purposes, killing being done in a filthy corner of a dilapidated barn, where a hoist for raising calves had been rigged. Here the floor and sidewalls were spattered with blood and filth, and decomposing calves' feet were lying upon the floor. The place was permeated with foul and offensive odors. The owner was served with a notice to make certain changes in his slaughter-house, and to discontinue these improper practices within twenty days.

S. G. Langer, Clinton, Hunterdon County. At the time of the first inspection of this place it was found in filthy condition, and a hog-pen adjoining was also filthy. Certain changes in the slaughter-house and surroundings were made to the owner after the inspection was made. At the time of the reinspection, six months later, the place was still in a filthy condition, and little effort had been made to comply with the law, and with the recommendations made by this Board. After the second inspection the owner was notified to discontinue slaughtering until such time as he had complied with the orders of the Board.

Samuel Hunt, Haddonfield, Camden County. This slaughter-house is simply one corner of a barn where horses are stabled. It is only used occasionally for slaughtering purposes by one butcher, who kills animals there to supply his retail trade. The owner was notified that this was not a fit place in which to kill animals intended for use as food, and that he must either provide himself with a suitable slaughter-house or discontinue slaughtering.

Joseph Berger, Trenton, Mercer County. This slaughter-house is situated on an alley, and is surrounded by ground which is poorly drained and on which, because of the number of animals stabled nearby, there is a large daily collection of manure. The number of animals slaughtered is large, making the daily removal of offal very important. This, however, is not done. Carcasses which have been condemned because of disease have been permitted to lie on the floor of the killing room for two or three days. Diseased parts of animals have been removed and hidden from the city meat inspector, and have subsequently been found by the inspector attached to this division. Diseased animals, not fit for use as food, and immature calves have been slaughtered here and dressed and sold for food. The owner of the slaughter-house has made the structural changes recommended by the State Board of Health, but the persons using the slaughter-house have failed to operate it in such a manner as to insure the wholesomeness of the meats there produced, and a license to this establishment has, therefore, been withheld for the present.

Morris Hann, New Brunswick, Middlesex County. This building is a wooden structure, and was found on first inspection to be in a filthy condition. The floor is of wood, rough and uneven, and

the crevices between the boards were filled with blood and filth. Refuse material was piled in one corner of the killing room. The side walls were of rough boards encrusted with dried blood. About ten wagon loads of decomposing offal were piled just outside the door, emitting odors which could be detected several hundred feet away. At the time of inspection two dressed carcasses of immature calves, and a tubercular beef carcass, were hanging in the killing room ready for sale. These carcasses were condemned and denatured by our inspector. The owner of this slaughter-house was notified to discontinue slaughtering, and to clean up the premises, and the Attorney General has been requested to bring proceedings against him for operating a slaughter-house without a license.

Wagner & Meyer, Trenton, Mercer County. At the time of the first inspection of this slaughter-house certain unsanitary conditions were found, and it was evident that the building was not properly cleaned after killing. The room used for rendering purposes was dirty. The following recommendations were made to the owners of this slaughter-house:

1. That the windows of the killing-room and lardroom be provided with screens.
2. That the lardroom be thoroughly cleansed, whitewashed or painted, and kept clean.
3. That all refuse material be removed daily.
4. That the floor of the killing-room be cleansed immediately after killing is completed.
5. That the rack upon which calves are slaughtered be thoroughly cleansed and kept clean.
6. That all utensils used about the building be kept clean.
7. That all doors when not in use be kept closed or else screen doors be provided.

A reinspection of the premises showed that all these recommendations had been complied with, and a license was issued to the owners.

Abraham Wertheim, Perth Amboy, Middlesex County. On first inspection this slaughter-house was found to be a dilapidated old shed in filthy condition, and so located as to be a nuisance. The owner was cited to appear before the State Board of Health to show cause why a license to operate this slaughter-house should not be refused. He agreed to build a new slaughter-house in a

more suitable location, and did so, first submitting plans and specifications of the proposed building to the State Board of Health for approval. His present slaughter-house is a thoroughly satisfactory structure, built of concrete with smooth floor and side-walls, and provided with abundant water supply and proper drainage. A license has been issued for this slaughter-house.

MEAT INSPECTION.

During the numerous visits of our slaughter-house inspector to establishments where meats are prepared for food purposes, he had opportunity to make examinations of the quality of meats which were being prepared. During the year the traffic in immature calves was also investigated, particularly in Hudson county. These investigations showed that large numbers of immature calves were being sent to the larger cities of the State from the milk producing districts. In a number of cases where the shipment of immature calves was detected sufficient evidence was obtained to warrant the State Board of Health in authorizing prosecutions against the shippers.

A table showing in detail the number of meat inspections and the results of these inspections is given below:

TABLE 10.—SHOWING THE NUMBER OF MEAT INSPECTIONS DURING THE YEAR, IN DETAIL.

DATE.	OWNER.	ADDRESS.	Place where inspection was made.	ARTICLE.		Cause for condemnation.		CONSIGNEE.	Suit authorized.
				Beef.	Veal.	Pork.	Immaturity.		
				Inspected.	Inspected.	Inspected.	Inspected.		no yes
April 17, 1911	L. J. Buchanan.....	New Milford, N. J.....	Hoboken		7				no
" 24, 1911	W. H. Johnson.....	Sussex, N. J.....	"		6				yes
" 28, 1911	John Bedell.....	"	"		5				"
" 28, 1911	Chas. F. Vealy.....	Glenwood, N. J.....	Jersey City.		4				"
May 1, 1911	J. L. Springer.....	New Milford, N. J.....	Hoboken		3				Hoboken Butchers Supply Co.,
" 4, 1911	John Bedell.....	Sussex, N. J.....	"		2				Ortlieb & Volmer.....
" 6, 1911	M. S. Rogers.....	Quarryville, N. J.....	"		2				"
" 6, 1911	John Springer.....	Sussex, N. J.....	"		2				"
" 10, 1911	John Bedell.....	Sussex, N. J.....	"		2				"
" 10, 1911	M. S. Rogers.....	Quarryville, N. J.....	"		2				"
" 17, 1911	John Bedell.....	Sussex, N. J.....	"		1				"
" 20, 1911	"	"	"		1				"
" 20, 1911	M. S. Rogers.....	Quarryville, N. J.....	"		1				"
" 20, 1911	C. F. Vealy.....	Glenwood, N. J.....	Jersey City.		1				"
" 26, 1911	N. S. Rogers.....	Quarryville, N. J.....	Hoboken		1				"
" 26, 1911	W. H. Johnson.....	Sussex, N. J.....	"		1				"
" 28, 1911	John Bedell.....	"	"		1				"
June 12, 1911	"	"	"		1				"
July 28, 1911	"	"	"		1				"
August 24, 1911	Barney Rykema.....	Lodi, N. J.....	Lodi		1				Barney Rykema.....
September 1, 1911	Hoboken Butchers Supply Co.,	Newark, N. J.....	Newark City.		1				Hoboken Butchers Supply Co.,
October 6, 1911	Julius Hoch, Son.....	Newark, N. J.....	Newark		3				Julius Hoch, Son.....
" 6, 1911	Jacob Well.....	"	"		20				Jacob Well.....
" 14, 1911	Harry Ollitsky.....	Trenton, N. J.....	Trenton		1				Harry Ollitsky.....
" 30, 1911	Jacob Lampart.....	"	"		1				Jacob Lampart.....
Totals.....				41	68	62	6	4	

What little work we have been able to do in the inspection of meats indicates only too plainly the necessity for State wide inspection of all meat which is slaughtered for use as food. There can be no doubt that large numbers of diseased animals are prepared for use as food in this State, and this practice should be stopped. It is earnestly hoped that the Legislature in its next session will take some action which will result in a more adequate supervision of our meat supply.

INSPECTION OF CANNING FACTORIES.

During the 1909 session of the Legislature a supplement to the food and drugs act was passed which regulated certain sanitary conditions in all establishments where food intended for sale or distribution is produced, stored or handled. It was learned as a result of attempting to enforce this act during 1910 by inspections of a number of the larger food producing establishments and canning factories that there were numerous conditions which needed changing, and if changed, would result in a marked improvement in the sanitary quality of the output. Throughout the present year a considerable amount of time has been given over to the investigation of canning factories.

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TABLE II.—CANNING FACTORIES.

BUILDING.				WATER SUPPLY.				DISPOSAL OF WASTES.		SURROUNDINGS.			PERLING AND CUTTING TABLE.							PULP AND PASTE.						
WASH ROOMS. MEN.		WASH ROOMS. WOMEN.		TOILETS. MEN.		TOILETS. WOMEN.		Polluted.	Abundant.	Liquids.	Solids.	Clean.	Fair.	Dirty.	Preliminary Sorting.	Washing Stock.			CONSTRUCTION.				Entirely Sound Stock Used.	Press Properly Constructed.	Is Cold Process Pulp Made.	How Stored.
Provided.	Condition.	Provided.	Condition.	Location.	Condition.	Location.	Condition.									Good.	Fair.	Poor.	Running Water.	Drain Connection.	Fall Used.					
no	no	no	fair	outside	poor	outside	fair	no	yes	creek	carted daily	+	+	no	+	+	+	no	yes	W	no	no	yes	bbls.		
..	..	yes	..	..	..	..	..	..	..	open cesspool	..	+	+	yes	+	+	+	..	..	W	..	..	..	..
yes	good	no	good	..	fair	inside	good	..	..	..	..	+	+	no	+	+	+	..	..	M	yes	..	..	cans
..	..	yes	good	..	fair	outside	fair	..	..	cesspool creek	..	+	+	..	+	+	+	..	..	W	..	..	..	..
..	..	no	..	none outside	..	..	..	..	..	..	..	+	+	..	+	+	+	no	..	..	..	..	..	..
..	..	..	..	..	fair	..	..	..	..	creek	carted daily	+	+	..	+	+	+	..	..	..	..	..	..	..
..	..	..	..	..	..	..	..	..	..	creek	..	+	+	..	+	+	+	..	..	..	..	..	..	..
..	..	..	..	office, outside, Italians	fair, poor	..	..	..	..	under factory	..	+	+	..	+	+	+	yes	yes	F	..	..	..	..
..	..	..	..	outside	..	..	..	..	..	Cohansey River	..	+	+	..	+	+	+	..	..	W	..	..	..	..
..	poor	outside	poor	no	yes	Cohansey River	made into soup stock, skins carted	+	+	yes, imperfect	+	+	+	yes	no	no	processed cans	
Yes, in toilet	fair	yes, in toilet	fair	none outside	poor	outside	poor	no	yes	..	..	+	+	yes	+	+	+	..	..	W	yes	no	..	cans
no	..	no	..	..	none	outside	none	..	..	..	..	+	+	no	+	+	+	no	yes	..	yes	..	..	cans
..	..	..	..	..	fair	..	fair	..	..	..	..	+	+	..	+	+	+	..	..	..	..	..	..	..
yes	good	yes	good	..	good	..	good	..	..	sewer	..	+	+	..	+	+	+	no	yes	W	..	..	..	bottles
no	..	no	..	..	..	..	..	..	..	cesspool	..	+	+	..	+	+	+	..	..	M	yes	..	..	..
..	..	yes	..	..	poor	..	poor	..	..	under cannery	..	+	+	yes	+	+	+	..	..	..	..	..	..	..
..	..	..	..	..	fair	..	fair	..	..	Alloway Creek	..	+	+	..	+	+	+	yes	..	..	..	..	..	..
..	..	no	..	..	..	..	..	..	..	..	..	+	+	..	+	+	+	..	..	F	..	..	..	..
..	..	..	..	..	..	..	..	..	..	creek	composted	+	+	..	+	+	+	no	..	W	..	..	..	bbls.
..	+	+	..	+	+	+		
..	+	+	..	+	+	+		
..	+	+	..	+	+	+		
yes	good	yes	good	inside	good	inside	good	..	..	sewer	..	+	+	yes, imperfect	+	+	+	..	..	F	..	..	..	..
no	..	no	..	outside	..	outside	..	..	..	..	..	+	+	yes	+	+	+	..	..	W	..	..	..	..
yes	good	yes	good	..	..	..	..	..	..	..	..	+	+	..	+	+	+	..	..	M	..	..	..	..
yes	good	yes	good	inside	..	outside	fair	..	..	sub-soil drainage	..	+	+	..	+	+	+	no	..	E	..	..	..	cans
no	..	no	..	..	..	..	..	..	..	..	..	+	+	..	+	+	+	..	..	..	..	..	..	bbls.
yes	good	yes	good	..	poor	..	..	..	..	sand carted	..	+	+	..	+	+	+	yes	..	W	..	..	..	..
..	..	..	..	..	..	..	..	..	..	sub-soil drainage	..	+	+	..	+	+	+	..	..	F	..	..	..	..
..	+	+	..	+	+	+		
no	..	no	..	inside	good	inside	good	..	..	..	..	+	+	..	+	+	+	..	..	..	..	..	..	bbls.
..	..	..	..	outside	bad	..	..	..	..	..	..	+	+	..	+	+	+	..	..	F	..	..	..	cans
..	..	..	..	..	..	..	..	..	..	..	..	+	+	..	+	+	+	..	..	..	..	..	..	bottles
yes	good	yes	good	inside	fair	inside	good	carted	..	+	+	..	+	+	+	no		
no	..	no	..	outside	..	outside	Salem Creek	Salem Creek	+	+	..	+	+	+	W	cans		
..	cesspool	..	+	+	yes	+	+	+	M		

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 blank

The preceding table shows that forty-one canning factories were inspected during the year. Our inspections, the results of which are above tabulated, show at thirty-five of the establishments tomatoes are canned, nineteen make tomato pulp, four manufacture tomato catsup, twelve can vegetables of various kinds and one packs tomato seed and manufactures catsup as a by-product. At thirty-one of the factories the floors were of wood, and in numerous instances not tight, while in thirty-five of the factories the side-walls were rough. Permanence and security against leakage through the floors are important. All floors should be smooth and impervious to water. It is hardly necessary to say that the cleanliness of the floor itself is essential. In only fourteen factories were wash rooms provided for female help, and in but ten factories were similar accommodations provided for the men. Attention is directed to the fourth section of chapter 231 of the laws of 1909. It reads:

"All operatives, employes, clerks, or other persons who handle the material from which food intended for distribution or sale is prepared, or the finished product, before beginning work and after visiting the toilet, shall wash their hands and arms thoroughly with clean water and soap, and every owner or manager of any place in which food is produced, manufactured, prepared, packed, stored, distributed or sold shall provide adequate facilities for such washing, and it shall be the duty of every such owner and manager to take all reasonable means to compel all operatives, employes, clerks or other persons handling the material from which food is prepared, or the finished product, to perform such washing as aforesaid. All toilets, lavatories and wash rooms shall be separate and apart from the room or rooms where any process incident to the production, manufacture, preparation, packing, storage, sale or distribution of such food are carried on, and such toilets, lavatories and wash rooms shall, at all times, be kept in a clean and sanitary condition."

Using the classification of clean, fair or dirty to broadly indicate the condition of the factory surroundings, it can be observed from the table that twelve appear in the clean, twenty-three in the fair and six in the dirty class. Cleanliness of the grounds about the factory is worth all the care required to secure and maintain it. If there must be outbuildings or any other fixtures or places they should at all times be kept in a clean condition. In the country where water-carriage is not available the privy should be arranged as a dry earth closet and all household slops and miscellaneous rubbish should be excluded from it.

As the result of our inspections it has been learned that at only sixteen factories is the stock sorted so as to remove the sound from the partly decomposed or unsound stock. Some manufacturers make no attempt to reject the decayed portions of their fruit, and

hence their final product is of an inferior grade. Sometimes the peelings and trimmings from this stock are made into pulp. It is quite obvious, where pulp is made from trimmings of decayed and partially decomposed stock, that it will invariably appear badly when viewed by the microscope. In some factories it is the duty of the peelers to sort, cut and reject the unsound stock at the peeling table. In the opinion of the writer this is the wrong place for sorting to be done. Stock should be sorted before reaching the peeling table. Equally important is the washing of all material intended for canning. At the present time a variety of washers are in use. A good washer should be constructed so as to remove all sand and dirt. Under no circumstances should stock pass into the scalding with dirt or sand clinging to it. Tomato pulp is made either from whole sound stock or from skin and core refuse, usually by running the stock through a cyclone or pulper, after which it is concentrated, salt added, placed in cans and processed. Considerable discussion has arisen in the trade as to whether it is proper to manufacture tomato pulp from skin and core refuse. There would seem to be no objection to this procedure if the pulp be made from the skins and cores of whole sound tomatoes properly handled.

Tomato paste was manufactured at one factory operated by George Roncoroni during the present year in the following manner: The tomatoes are brought to the factory by farmers, emptied into the washer and scalded, after which they pass to the sorting table where the sound fruit is separated from the unsound. The sound tomatoes are placed in a square wooden tank. The separated unsound tomatoes pass to another table where the partially decayed and decomposed parts are removed by cutting. The remaining sound tomatoes are then placed in the above mentioned square wooden tank. The tomatoes in the square tank are partially cooked by steam after which they pass through a cyclone where they are peeled and the skins and seeds removed. The resulting pulp is then put into muslin bags and placed on a cement floor and pressed, barrels filled with water being used for weights, for from twelve to fifteen hours. After the pressing process, the purpose of which is to remove the excess water, the pulp, which is now substantially paste, is placed into wooden bins where it is mixed with salt. After admixture with salt, the paste is packed into cans by means of machinery, the cans sealed and processed. The method of pressing used here is crude and unclean.

A Chemical and Bacteriological Study of Eggs.

WILLIAM G. TICE, *Assistant Chief.*

INTRODUCTION.

Perhaps no article of diet of animal origin is more commonly eaten or served in a greater variety of ways than eggs. The egg industry has recently received much attention from the press of the country, and probably more has been learned about eggs during the past three years than ever before in the history of the egg business.

The present article will be an attempt to present (1) a brief review of the methods practiced by the "trade" in handling eggs; (2) a compilation and discussion of certain chemical and bacteriological results which the writer has obtained with eggs of known history.

HOW EGGS ARE GRADED.

Eggs should only be produced under clean and sanitary conditions. Adequate and clean houses should be erected wherein the hens can lay. When the clean, fresh eggs are gathered they should be put in a clean, dry, cool place until marketed. When eggs have been properly gathered, handled and kept, the question of grading which the "trade" undertakes becomes much simplified. Eggs are among the most difficult of food products to grade. This is because each egg must be examined separately, and because the white and yolk cannot be accurately judged without breaking the shell. There are many ways of grading eggs; the methods differing somewhat in different localities. From external appearance eggs are frequently selected for size, color, cleanliness of shell and freedom from cracks.

"Candling," as it is called, is the method commonly used in grading. The eggs are held up in a suitable device against a

bright light. The writer has devised a candling box which has worked exceedingly well. It consists of two inter-folding wooden boxes. The front of the smaller box is provided with a hole two and a half inches in diameter, sliding in front of which is a copper slide with holes of various sizes for the purpose of accommodating different size eggs during the process of candling. On the inside of the larger box facing the above mentioned opening in the smaller box is a lamp socket and a 32 c. p. incandescent light. Because of the inter-folding feature of the boxes, the focus may be conveniently changed, and thus the candler is assisted in forming his opinion of the egg in question. Almost all of the large egg-houses to-day are provided with a dark room wherein an expert corps of egg candlers sort eggs into grades. The candler usually holds the larger end upward and twists it, causing the contents of the shell to rotate. These men handle eggs with much dexterity and rapidity, and at the same time it is surprising how much they can tell of the actual condition of an egg. Thus eggs may be graded into fresh or firsts, seconds and cracks, and rotten classes.

Fresh or Firsts. By the term "fresh" as applied to eggs is generally understood desirable qualities. A fresh egg when candled should be very clear, and only the slight outline of the yolk be visible. There should be very little air space noticeable. Under "firsts" are placed all clean shelled eggs of uniform size and fullness of shell.

Seconds. This grade usually includes small, irregular or undersized eggs, "dirties," "weak," "watery" and "heated" eggs. "Dirties" are those to which soil or nest dirt adheres, or whose shells are stained or smeared by coming in contact with broken eggs during transit. The white of a fresh egg is somewhat viscous, and in many cases that portion immediately surrounding the yolk is semi-solid. When this white deviates from its normal viscosity, the egg is said to be "weak," and when so broken down as to appear like water, when viewed by "candling," the egg is said to be "watery." This class of eggs are edible, but do not possess the keeping properties of fresh eggs. A "heated" egg is a fertile egg, in which growth of the embryo has begun. Heated eggs can be told by the candler by the appearance of the yolk, which is somewhat darker and more opaque than a fresh egg. This class of eggs is frequently accompanied by water and some-

times by the appearance of blood rings. When blood rings occur the egg is unfit for use as food. It may be said at this point that blood may sometimes be found in a fresh egg; this is probably due to a slight rupture of the oviduct of the hen. An egg of this character should not be confused with the so-called blood ring of the "heated" egg.

Cracks. These may be grouped broadly into three classes: (a) cracks, or those in which the shell is noticeably cracked; (b) "leakers," or those from which the white and yolk may escape; (c) "checks (blind check)," a crack not readily observable without candling. This class of eggs are sold to bakers.

Rotten Class. There are two well defined types of rotten eggs: (1) those which have gone bad as a result of bacterial growth, and (2) those which have spoiled due to the formation of moulds. A rot in the egg "trade" is understood to mean an egg unfit for use as food. There are two kinds of rots: red rots and black rots. A red rot appears reddish brown by candling, and when broken, has a yellowish, coagulated appearance. A black rot is one whose contents are almost entirely fluid and blackish in color. This type of rot is very often accompanied by a hydrogen sulphide or typically rotten egg odor. Spot eggs are here included under the rotten egg heading, although this is not always done in the "trade." "Spot eggs" may be classified as "light" and heavy "spots." By a "light spot" is meant an egg in which germination has started as a result of incubation, and whose yolk has a tendency to adhere to the shell membrane. A "heavy spot" is characterized by the adherence of the yolk to the shell membrane.

Some attempt is also made to grade eggs according to the color of the shell. Those of hens vary from white to a light or deep brown shade. The color of the shell is an element which has some effect upon the market value of eggs. Thus, Boston is a brown egg market; New York, a white egg market, while in Philadelphia there seems to be no preference. There is a popular idea that eggs with brown shells are richer. Experiments made at the California and Michigan Experiment Stations would seem to clearly show, however, that all such conditions as care, sanitary surroundings and food being equal, there is no difference in the quality of white and dark shelled eggs.

EGGS BY WEIGHT.

The size of hens' eggs vary, depending largely upon the breed. According to a large number of American analyses, an egg on an average weighs two ounces, and has the following percentage composition: Shell, 10.5; water, 66.0; protein, 13.1; fat, 9.3, and ash, 0.9. There has recently been considerable demand on the part of the consumer that eggs be sold by weight. This would seem to be the fairest way of measuring the quantity as between the seller and the buyer. Naturally, the trade are opposed to the method, and argue it is more feasible to grade according to size and other qualities and to sell by count. It has been pointed out that to remove eggs from their packing cases and to weigh them by themselves would be a very expensive process. This additional expense of handling would all be finally imposed upon the consumer, and while he might actually get more "white and yolk" by the weighing process than by the present count method, there might be a decided disadvantage to him in the change because of the increased cost of handling the product.

PRESERVATION OF EGGS.

The problem of keeping eggs for a considerable period, and at the end of that time have them in fit condition for use as food is one which has held the attention of the trade for years. Many methods of preservation have been used, such as packing the eggs in lime, salt or by coating with some material which excludes the air. According to the experiments made by the North Dakota Experiment Station, water glass conforms more closely to the requirements of a good preservative than any of the substances commonly employed. Of twenty methods of preserving eggs tested in Germany, the three which proved most effective were coating with vaseline, preserving them in lime water and preserving them in water glass. All of those methods depending upon the external application of some substance to the shell have been almost entirely superseded by the process of cold storage, which, properly regulated, would seem to be the best method of keeping eggs over an extended time and still have them fit for use as food.

The cold storage egg business is a development of the last twenty years, and at the present time is an enormous industry. Almost all egg dealers realize the importance of keeping eggs cool and are now providing not only chill rooms for short holding, but a room as near 40° F. as possible for the candling and sorting of eggs. Eggs are usually packed after sorting into wooden cases, containing thirty dozen each, held in position by pasteboard fillers. They are usually stored from the first of March to the first of May, and remain in storage from six to nine months. It is the generally accepted opinion among "egg men" that eggs are at their "best" from March to May, and that eggs stored during these months keep better than eggs stored later in the season. The successful storage of eggs depends very largely on the condition of the egg when placed in storage, and other important factors are temperature, humidity and cleanliness. A constant temperature is essential, and in the best conducted storage houses every precaution is taken to keep the temperature constant. About 32° F. is generally the temperature maintained. A constant humidity is equally important as the temperature. In many of the warehouses in which the writer has been, the humidity was kept at seventy-eight. Too much moisture destroys the keeping qualities of eggs to a very large degree, causing the growth of moulds and the subsequent destruction of the flavor. An egg is very susceptible to its surroundings and will absorb odors readily. It is therefore important that places wherein eggs are stored should be kept clean. Eggs when stored change in chemical composition, lose water by evaporation and shrink, lose their flavor and, in the language of the trade, fail to "stand up" like a fresh egg. It has been stated that eggs stored under favorable conditions lose about 10 per cent. by weight, which probably is very nearly correct. The writer stored some eggs in an ordinary refrigerator for ten months (average temperature 50° F.), and noted their loss in weight. This experiment, of course, is not strictly analogous to cold storage. Another lot of eggs were permitted to stand at room temperature (72° F.) for ten months in a clean, dry wooden box; at the end of that time they were weighed and examined. These eggs were almost "bone dry" and without disagreeable odor.

TABLE SHOWING LOSS IN WEIGHT DUE TO STORAGE FOR TEN MONTHS. AVERAGE TEMP. 50° F.

Kind.	Weight fresh.	Weight after 10 months.	Loss in weight.	P.C. loss.
F.....	64.0	53.5	10.5	16.4
F.....	46.0	35.0	11.0	23.9
F.....	52.5	42.0	10.5	20.0
F.....	52.0	41.5	9.5	18.1
F.....	59.8	49.5	10.3	17.2
F.....	57.0	41.0	16.0	28.0
F.....	46.0	38.0	8.0	17.3
F.....	52.0	43.0	9.0	17.3
F.....	56.5	46.0	9.5	16.8
F.....	54.0	43.0	11.0	20.3
F.....	48.1	37.0	11.0	23.0
F.....	45.5	33.5	12.0	26.1
F.....	63.0	53.0	10.0	15.8
F.....	45.0	34.0	11.0	24.4
Average P.C. loss.....				18.9

TABLE SHOWING LOSS IN WEIGHT DUE TO STORAGE FOR TEN MONTHS. AVERAGE TEMP. 72° F.

Kind.	Weight fresh.	Weight after 10 months.	Loss in weight.	P.C. loss.
F.....	63.0	21.6	41.4	65.7
F.....	55.5	20.0	35.5	64.0
F.....	49.0	15.0	34.0	69.3
F.....	54.0	19.0	35.0	64.8
F.....	45.0	15.5	29.5	65.5
F.....	51.0	16.5	34.5	67.6
F.....	55.0	18.5	36.5	66.3
F.....	51.0	17.5	33.5	65.8
F.....	68.0	22.0	46.0	67.6
F.....	62.0	22.0	40.0	64.5
F.....	49.8	17.3	32.5	65.2
F.....	53.0	19.0	34.0	64.1
F.....	54.5	19.4	35.1	64.4
F.....	47.5	15.0	32.5	68.4
Average P.C. loss.....				65.9

PHYSICAL EXAMINATION OF EGGS.

"Candling," the process of which has already been described, is probably the best way of testing the freshness of eggs. Various ways have been suggested of testing the freshness of eggs. According to Siebel, a fresh laid egg placed in a solution made up of two ounces of salt and one pint of water will at once sink to the bottom. An egg one day old will sink below the surface, but not to the bottom, while one three days old will float just immersed in the liquid. This test has also been made and confirmed by De-larue. By observing the way in which eggs act when poached has also been suggested as a means of determining the freshness of eggs. The writer has compared fresh eggs and storage eggs six months and ten months old, respectively, and can say there is a noticeable difference in appearance of the albumen between the storage eggs and the fresh eggs. The albumen of the storage eggs disintegrated and spread. The New York State Experiment Station studied the change in the specific gravity of eggs on keeping

and found that on an average fresh eggs had a specific gravity of 1.090; after they were ten days old, of 1.072; after twenty days, 1.053, and after thirty days, of 1.035. The writer has made the following experiment on two batches of eggs. The eggs in question were two hours old when received. Each was carefully weighed and then placed in a specially devised cylinder, by which means the amount of water displaced by the egg was measured. By dividing the weight of the egg by the volume of water displaced, an average figure of 1.0721 was obtained. The eggs were permitted to stand for seventeen days and the experiment repeated, and an average figure of 1.0171 was obtained. The average room temperature where eggs were kept was 70° F. The eggs were in excellent condition after seventeen days.

BREED—LEGHORN HENS.

BREED—LEGHORN PULLETS.

Age 2 hours.			Age 17 days.			Age 2 hours.			Age 17 days.		
Weight.	Vol. of water in cc. displaced by egg.	Weight of egg in gms. + vol. in cc.	Weight.	Vol. of water in cc. displaced by egg.	Weight of egg in gms. + vol. in cc.	Weight.	Vol. of water in cc. displaced by egg.	Weight of egg in gms. + vol. in cc.	Weight.	Vol. of water in cc. displaced by egg.	Weight of egg in gms. + vol. in cc.
48.0	45.3	1.089	47.3	45.3	1.044	51.5	48.0	1.073	48.3	48.0	1.006
53.6	49.6	1.080	50.7	49.6	1.022	49.5	45.8	1.080	46.8	45.8	1.023
53.4	49.3	1.072	50.3	49.3	1.010	51.7	47.9	1.079	48.7	47.9	1.017
56.0	52.1	1.074	52.9	52.1	1.011	47.0	43.7	1.075	44.3	43.7	1.013
66.3	62.1	1.067	63.1	62.1	1.016	43.4	40.1	1.082	40.7	40.1	1.014
47.3	43.3	1.083	44.2	43.3	1.020	45.1	42.1	1.071	43.0	42.1	1.021
60.3	56.0	1.076	56.3	56.0	1.010	33.4	49.1	1.067	50.0	49.1	1.048
61.8	57.5	1.071	58.0	57.5	1.008	43.9	41.2	1.065	41.3	41.2	1.002
55.3	52.1	1.065	53.0	52.1	1.011	48.4	44.7	1.082	45.5	44.7	1.018
58.3	54.7	1.065	55.3	54.7	1.011						
Average..	1.0692		Average..	1.0163		Average..	1.075		Average..	1.018	

CHEMICAL EXAMINATION OF EGGS.

Plan of Work. The eggs for this investigation were obtained from a friend of the writer, who formerly maintained a large number of chickens of the Wyandotte and Faverolles breed. These chickens were kept under the best sanitary conditions, well fed and given the best of care. The quality of the eggs, aside from the freshness, were of the best. The eggs, ninety in number, when received on May 3d, 1910, were two days old, and they were placed

in cold storage on the following day. They were placed in a clean wooden box in the following order: Thirty-two resting on large end, thirty-two on small end, and twenty-six on the side. At certain regular intervals, as indicated in the table, a representative number of eggs were removed and examined chemically, bacteriologically and by candling. Tables 1 and 11 show the results obtained on eighty of these eggs; the remaining ten were used in making minor tests or were broken in transit.

The following analytical procedure and bacteriological technique was employed: Because each egg was examined bacteriologically as well as chemically the procedure used is described jointly. Each egg was carefully weighed and candled, and the shell washed with a 1:1500 solution of mercuric chloride. After drying the shell was ruptured with sterile forceps, and the white separated from the yolk. The yolk still remaining in the shell was then washed with a 1:1500 mercuric chloride solution, and the yolk and shell weighed, after which the yolk was again washed with sterile water to get rid of any remaining trace of mercuric chloride. One cubic centimeter of the yolk was then removed with sterile pipette and placed in a sterile tube for bacteriological examination. The remaining portion of yolk, after thorough mixing, was diluted to five hundred cubic centimeters with water. Two hundred and fifty cubic centimeters of this mixture were then titrated with twentieth normal sodium hydroxide, with phenolphthalein as an indicator, using the remaining 250 cubic centimeters of "yolk water" mixture as a blank. The entire white of the egg was then titrated with twentieth normal sulphuric acid, using phenolphthalein as an indicator. The following chemical data was therefore obtained on each egg. The entire weight, weight of yolk, weight of shell and weight of white by difference, the alkalinity of white and the acidity of yolk. After experimenting with a number of indicators, phenolphthalein was found best suited as an indicator in determining the alkalinity and acidity.

In the tables which follow it was thought desirable to express results of alkalinity of white as cubic centimeters of tenth normal acid per 100 grams egg white, results of acidity of yolk, as cubic centimeters tenth normal alkali per 100 grams egg yolk, and results on white and yolk as cubic centimeters tenth normal alkali per 100 grams of egg substance.

Table II. is intended to show the results obtained on a collection of eggs stored in a clean wooden box at room temperature (70° F.) for ten months. These eggs were very dry and almost without odor when removed from box. Attention is drawn to the acidity figure.

SUMMARY OF CHEMICAL EXAMINATIONS.

All of the eggs, after the first month, showed "shrinkage," growing more marked as the age of the eggs progressed. Two eggs older than six months had acquired a musty odor, and in several eggs between the ages of seven and nine months, it was difficult to completely separate the white from yolk. The tendency of the white, in eggs older than six months, was to become more fluid than the whites in fresh eggs, while the yolks broke in several cases with very slight pressure. The three graphs shown in the third table indicate that the acidity of the yolk drops quite steadily after the first month of storage. The white maintains a fairly uniform alkalinity until the seventh month when it also slowly diminishes. The third curve shows the acidity of the entire egg calculated in cubic centimeters of tenth normal alkali per 100 grams of egg substance, and it will be seen that the acidity of the whole egg diminishes slowly as the period of storage progresses. Had this experiment been continued farther it appears probable that these curves would ultimately have met at a common locus which would have been at or near the neutral point.

An examination of table II., which states the results obtained on eggs stored for 300 days at room temperature, shows that in eggs maintained at this temperature the character of the decomposition differs from that in eggs maintained at a temperature of 32° F., the average acidity of these eggs in terms of tenth normal alkali per 100 grams of egg substance being 135 as against only 4.6 on the eggs kept in cold storage for the same length of time.

The writer was of the opinion at first that the total acidity of the egg might be taken as an index of its quality, and therefore used as a test to determine its freshness. This, however, seems hardly feasible with the quality of eggs used in this investigation, because the difference found in eggs of different ages was small enough to be masked by a variation between the figures obtained on different eggs of the same age.

TABLE I.—CHEMICAL EXAMINATION OF EGGS.
Wyandotte and Faverolles Breeds (F. and W.).

AGE.	KIND.	CANDLING.	WHITE.				YOLK.					
			Weight of egg.	Weight of shell.	Weight of white.	Weight of yolk.	Cc. N/20 acid required by white.	Cc. N/10 acid per 100 grms. of egg white.	Cc. N/20 NaOH required by yolk.	Cc. N/10 NaOH per 100 grms. of egg yolk.	Cc. N/20 NaOH per 100 grms. egg substance.	WHITE AND YOLK.
2 da.	W	Normal	49.0	5.5	27.0	18.5	5.8	10.75	13.0	39.40		
2 da.	F	Normal	63.0	5.5	40.0	17.5	8.2	10.25	14.8	42.25		
2 da.	F	Normal	51.3	5.0	33.0	17.0	8.0	10.15	14.0	41.20		
2 da.	F	Normal	54.0	5.0	32.0	17.0	6.5	10.10	14.0	41.20		
Average												
1 mo.	F	Normal	64.5	6.0	41.5	17.5	7.6	10.31	15.5	38.90		6.8
1 mo.	F	Slight shrinkage	49.5	5.5	28.5	15.5	7.0	12.25	12.0	38.75		
1 mo.	F	Normal	54.0	4.5	31.5	18.0	5.5	8.73	13.4	37.22		
1 mo.	F	Very slight shrinkage	46.5	5.0	24.5	17.0	5.0	10.20	13.0	38.23		
1 mo.	F	Normal	60.0	6.5	38.5	18.0	6.4	8.75	12.5	35.00		
1 mo.	W	Slight shrinkage	43.5	5.5	27.0	16.0	5.5	10.40	12.0	39.50		
1 mo.	F	Normal	44.5	4.5	26.0	15.0	4.1	7.95	11.0	36.70		
Average							9.66		37.40		6.9	
2 mo.	F	Slight shrinkage	54.3	6.0	29.3	19.0	6.0	10.30	12.7	33.40		
2 mo.	F	Slight shrinkage	48.5	4.5	27.5	18.5	5.0	9.10	10.6	32.20		
2 mo.	F	Slight shrinkage	49.0	5.5	27.7	18.8	6.2	8.90	10.6	33.50		
2 mo.	F	Slight shrinkage	45.0	4.5	28.0	12.5	5.0	8.90	7.5	30.00		
2 mo.	W	Shrunk and watery	47.0	4.4	26.5	16.1	5.5	10.50	11.6	38.00		
2 mo.	W	Very slight shrinkage	50.0	5.0	27.0	18.0	5.0	9.25	12.7	35.20		
Average							9.55		33.40		6.3	
3 mo.	F	Badly shrunk	44.8	5.8	21.0	18.7	6.2	14.75	13.0	34.70		
3 mo.	F	Shrinkage	42.5	5.0	22.8	15.0	6.0	13.10	9.1	30.90		
3 mo.	F	Shrinkage	50.5	6.7	27.5	17.3	6.8	10.50	12.5	35.50		
3 mo.	F	Shrinkage	51.0	6.0	27.5	17.5	5.4	9.80	12.6	36.00		
3 mo.	W	Normal	49.5	5.5	28.0	18.0	4.5	8.75	9.6	36.40		
3 mo.	W	Slight shrinkage	45.5	5.5	27.0	16.5	4.5	11.05	9.6	33.30		
3 mo.	F	Badly shrunk and watery	36.5	3.5	19.0	14.5	3.0	7.90	8.3	28.10		
Average							10.80		33.00		7.1	
4 mo.	F	Shrinkage	53.0	6.3	27.6	19.1	5.0	9.05	11.0	28.7		
4 mo.	F	Badly shrunk	46.5	6.0	22.5	19.0	4.9	10.10	10.3	27.7		
4 mo.	W	Badly shrunk	53.0	6.0	28.0	22.5	4.6	8.30	11.8	25.8		
4 mo.	W	Shrinkage	49.0	6.0	23.0	19.0	4.0	8.70	9.5	25.0		
4 mo.	W	Shrinkage	51.5	6.0	26.0	19.5	5.8	11.10	9.0	23.1		
4 mo.	W	Shrunk and watery	43.0	4.5	21.5	17.0	4.4	10.20	9.2	26.1		
4 mo.	F	Shrinkage	49.5	6.0	26.5	17.0	6.1	11.50	10.3	30.3		
Average							9.82		27.0		4.7	
5 mo.	F	Shrinkage	57.0	6.0	30.8	20.2	5.9	9.50	10.1	25.0		
5 mo.	F	Shrinkage	45.2	5.1	23.1	17.0	4.3	9.30	8.6	25.2		
5 mo.	F	Shrinkage	43.3	5.0	22.1	16.2	4.5	10.20	8.7	26.8		
5 mo.	F	Shrinkage	44.2	5.0	22.2	17.0	4.3	9.60	9.3	27.4		
5 mo.	F	Shrinkage	49.0	6.0	30.0	15.0	3.5	8.70	7.9	28.4		
5 mo.	F	Shrinkage	47.5	6.0	24.3	17.2	4.1	8.50	8.7	25.3		
Average							9.30		26.0		5.4	
6 mo.	F	Slight shrinkage	43.5	6.5	25.0	17.0	4.6	9.00	9.0	26.0		
6 mo.	F	Badly shrunk	49.3	6.0	27.5	18.8	2.0	8.60	7.5	24.6		
6 mo.	W	Badly shrunk	44.0	6.0	27.0	17.0	6.5	10.70	9.3	27.3		
6 mo.	W	Badly shrunk	48.5	5.5	23.8	19.2	5.2	10.90	9.8	25.4		
6 mo.	W	Shrinkage	49.2	5.1	24.2	19.3	5.4	11.10	9.5	24.6		
Average							9.04		25.6		5.1	
7 mo.	F	Shrunk and watery	56.3	6.0	31.8	18.5	3.8	8.00	7.4	25.4		
7 mo.	F	Badly shrunk	47.3	6.0	27.5	19.5	4.7	8.90	10.1	25.9		
7 mo.	F	Shrinkage	47.2	6.0	24.7	16.5	5.0	10.00	8.7	26.3		
7 mo.	F	Shrinkage	43.5	5.8	19.5	18.2	5.0	12.80	9.0	24.7		

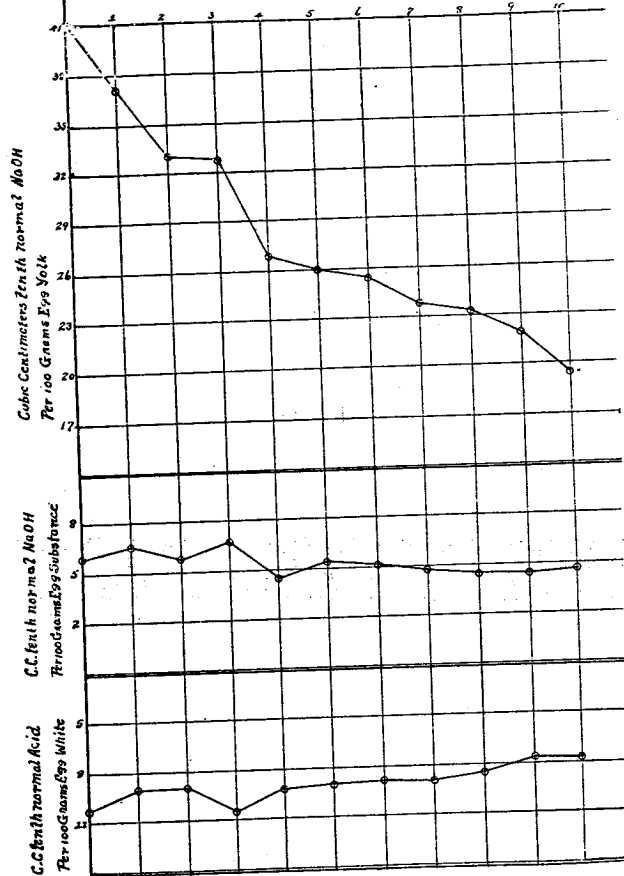
TABLE I.—CHEMICAL EXAMINATION OF EGGS—Continued.
Wyandotte and Faverolles Breeds (F. and W.).

AGE.	KIND.	CANDLING.	WHITE.				YOLK.					
			Weight of egg.	Weight of shell.	Weight of white.	Weight of yolk.	Cc. N/20 acid required by white.	Cc. N/10 acid per 100 grms. of egg white.	Cc. N/20 NaOH required by yolk.	Cc. N/10 NaOH per 100 grms. of egg yolk.	WHITE AND YOLK.	
7 mo.	F	Shrinkage	46.2	6.0	24.2	16.0	5.0	10.30	8.2	25.6		
7 mo.	F	Very badly shrunk	37.7	4.5	19.2	14.0	3.5	9.10	4.2	15.0		
7 mo.	F	Very badly shrunk	33.7	6.0	31.2	20.5	5.1	8.15	9.0	21.9		
7 mo.	F	Shrinkage	46.7	6.5	24.2	16.0	4.7	8.70	8.0	25.0		
7 mo.	F	Shrinkage	47.5	6.0	21.5	15.5	4.4	10.20	7.0	27.5		4.8
Average							9.46		24.1		4.8	
8 mo.	F	Shrinkage	46.2	5.0	20.7	20.5	4.0	9.65	7.4	18.05		
8 mo.	F	Slightly good	46.5	5.0	26.0	15.5	5.0	9.00	8.0	23.70		
8 mo.	F	Shrinkage	44.5	5.4	24.7	18.4	4.5	10.00	9.2	24.40		
8 mo.	F	Shrinkage	46.5	6.2	22.3	18.8	3.8	8.90	9.2	24.40		
8 mo.	W	Shrinkage	58.7	6.5	33.7	18.7	5.5	8.15	8.5	22.70		
8 mo.	F	Shrinkage	46.8	5.0	25.3	10.0	3.5	6.90	8.0	25.00		
8 mo.	F	Shrinkage	53.0	6.7	27.5	18.8	4.8	8.90	9.5	28.20		
8 mo.	F	Slight shrinkage	45.8	5.6	25.8	14.5	4.3	8.50	6.3	25.50		
8 mo.	F	Very badly shrunk	45.3	5.6	23.5	15.5	4.0	8.50	7.7	23.50		
Average							8.70		23.30		4.2	
9 mo.	F	Shrinkage	45.0	4.8	24.0	16.2	3.3	6.80	8.0	24.60		
9 mo.	F	Badly shrunk	43.0	5.0	23.0	15.0	3.0	6.50	6.5	21.60		
9 mo.	F	Shrinkage	48.9	6.0	24.7	18.0	4.1	8.20	8.5	23.60		
9 mo.	W	Shrinkage	49.3	5.1	21.1	14.1	2.5	5.90	6.0	21.20		
9 mo.	W	Shrinkage	40.3	6.0	22.5	15.5	3.1	6.90	7.0	22.50		
9 mo.	W	Shrinkage	40.0	5.0	21.0	14.0	3.5	8.30	6.3	22.10		
9 mo.	F	Shrinkage	56.7	6.0	31.7	19.0	6.4	10.40	8.3	22.50		
9 mo.	F	Shrinkage	40.2	5.0	20.2	15.0	3.1	7.20	6.3	22.10		
9 mo.	F	Shrinkage	47.2	6.0	24.7	16.5	4.1	8.30	8.0	24.20		
9 mo.	F	Shrinkage	45.2	5.8	22.2	17.2	4.4	9.90	7.0	22.90		
9 mo.	F	Shrinkage	45.2	5.8	22.2	17.2	4.4	9.90	7.0	22.90		4.5
Average							7.74		23.60		4.5	
10 mo.	F	By shrinkage	45.0	4.8	21.5	18.7	3.6	4.40	6.0	18.30		
10 mo.	F	Badly shrunk	40.5	5.5	19.5	15.5	2.9	7.40	7.3	20.30		
10 mo.	F	Badly shrunk	45.0	5.5	21.5	18.0	3.3	7.60	7.3	20.30		
Average							7.80		19.40		4.6	

TABLE II.—CHEMICAL EXAMINATION OF EGGS STORED FOR TEN MONTHS, AVERAGE TEMPERATURE 72° F.

Kind.	Weight fresh.	Weight after 10 months.	Weight of shell.	Weight of white and yolk.	WHITE AND YOLK.	
					Cc. N/20, NaOH required by white and yolk.	Cc. N/10 NaOH per 100 grms. eggs substance.
F	56.0	17.0	5.0	12.0	18.0	150
F	50.3	17.5	5.0	12.5	16.0	128
F	57.0	20.0	6.0	14.0	19.0	135
F	54.0	19.0	6.0	13.0	17.0	130
F	59.0	19.5	5.5	14.0	19.0	135
F	59.5	19.2	6.0	13.2	19.5	148
F	56.0	19.0	5.3	13.7	17.0	124
General average.....						133

TABLE III.—GRAPHICAL PRESENTATION OF RESULTS
TIME — MONTHS.



BACTERIOLOGICAL EXAMINATION OF EGGS.

Fifteen fresh eggs, sixty-two cold-storage eggs, ranging from two months to ten months old; ten cold-storage eggs maintained at a temperature of 32° F. for ten months, fourteen ice-box eggs maintained at an average temperature of 50° F. for ten months, and seven eggs stored at room temperature (72° F.) for ten months, were examined for the number of organisms present per gram. The yolks only of the fifteen fresh eggs and the sixty-two storage eggs were plated, while in the other above mentioned eggs plates were made on the mixed white and yolk. The bacteriological technique used has already been described. All plates were made on standard agar and incubated at 37° F. for forty-eight hours, after which a count was made with a hand lens.

SUMMARY OF BACTERIOLOGICAL EXAMINATION OF EGGS.

Tables I. to X. which follow give the results of the bacteriological examination of the yolks of certain eggs from two days old to three hundred days old. An inspection of table I., which gives the number of bacteria per gram in fifteen eggs, two days old, of the kind previously described, shows that all but five of these eggs contain no bacteria per gram, and that in only one of them were there bacteria present in large numbers. Table II. gives the results of examination of eggs, sixty days old, of the same kind, and shows that of six eggs, four contained no bacteria in one gram samples, and two contained less than one thousand bacteria per gram of yolk. Table III., which gives the results of the examination of ninety-day samples, shows that all of the seven eggs examined at this time contained considerable numbers of bacteria, from 500 to 4,800. Table IV., which gives the examination of eggs 120 days old, shows that at this time the numbers of bacteria found were very nearly the same as those obtained in the examination at ninety days. The examinations made at the end of 150 days, given in table V., show that the number of bacteria found at this time had materially increased, while the examinations made at the end of 180 days show a still further increase in the number

of bacteria. At the end of 210 days the number of bacteria found, as judged from the examination of nine eggs, appears to be somewhat smaller than the number found at 180 days, and between the samples examined at 240 days and 270 days, no noticeable difference in the number of bacteria can be observed. At the end of 300 days, when the experiment terminated, the numbers of bacteria found were smaller than on the five previous examinations.

It will also be seen from an inspection of these tables that the number of bacteria present in the yolks of eggs of the quality described, and kept for the ages above stated, is so variable that no satisfactory conclusions can be drawn regarding the relation between the age of the eggs and the number of bacteria present in them except in the most general way. It appears from the tables that the greater proportion of fresh eggs are sterile, or at least contain no bacteria in the yolk in one gram samples, and that eggs of this character may remain sterile for a period of sixty days under the conditions which obtain in these experiments. After that time the bacteria were always found in greater or lesser numbers in every egg examined. The fact that the number of bacteria appeared to diminish after a considerable length of time in storage has been noted by other observers, and is undoubtedly due to the gradual dying off of these organisms because of unfavorable conditions of temperature. These results clearly indicate the futility of attempting to use bacterial counts as a method of determining the age of eggs kept in cold storage under proper commercial conditions. It will be noted that in no instance were large numbers of bacteria found in these eggs even after a period of 300 days. In fact, the numbers of bacteria found are much too small to have caused, by their growth, changes in the composition of the egg sufficiently great to be detectable by the methods of examination previously described.

Table XI. shows the results of the examination of the mixed white and yolk of ten eggs of the quality previously described which had been kept in a commercial cold storage warehouse at 32° F. for 300 days. Table XII. shows a series of similar examinations on fourteen eggs of the same quality which had been kept for the same length of time in a refrigerator, the average temperature of which was 50° F., and table XIII. shows the results of the examination of seven eggs of the same quality which had

been stored for the same length of time in a clean wooden box in the laboratory, the average temperature of which approximated 70° F. The examination of these tables will show that the bacterial results upon the mixed whites and yolks of the eggs kept in cold storage approximate closely the results obtained from the yolks alone of eggs kept for the same length of time under similar conditions. The eggs kept in a refrigerator at 50° F. show considerable larger numbers of bacteria than those kept at 32° F., although it is significant that one of these eggs, after 300 days storage, contained only 230 bacteria per gram. The eggs kept at room temperature, as was to be expected, contained very much larger numbers of bacteria than the eggs of the other two lots, yet, in no instance were as many as 500,000 bacteria per gram found. These figures show very clearly that when eggs, which have been properly produced under clean conditions and stored in such a manner that they are protected from dirt and excessive dampness, may be kept for long periods of time, even at ordinary temperatures, without becoming so heavily infected with bacteria as to show appreciable evidences of putrefactive decomposition.

BACTERIOLOGICAL EXAMINATION OF EGGS.
Wyandotte and Faverolles Breed (W. and F.).

TABLE II.

Kind.	Age in days.	Yolk.	
		No. organisms per gram.	
		Standard Agar 37° F. counted at 48 hours.	
F	60	0	
F	60	0	
F	60	120	
F	60	960	
F	60	0	
W	60	0	

TABLE III.

Kind.	Age in days.	Yolk.	
		No. organisms per gram.	
		Standard Agar 37° F. counted at 48 hours.	
F	90	4,800	
F	90	500	
F	90	1,600	
F	90	2,950	
W	90	2,700	
W	90	700	
F	90	4,000	

TABLE I.—FRESH.

Kind.	Age in days.	Yolk.	
		No. organisms per gram.	
		Standard Agar 37° F. counted at 48 hours.	
F	2	25	
F	2	0	
W	2	0	
F	2	0	
F	2	0	
W	2	11,030	
W	2	0	
W	2	30	
W	2	0	
F	2	0	
W	2	0	
F	2	0	
F	2	10	
F	2	0	
F	2	12	
W	2	0	

BACTERIOLOGICAL EXAMINATION OF EGGS.
Wyandotte and Faverolles Breed (F. and W.).

TABLE IV.

Yolk.		
No. organisms per gram.		
Standard Agar 37° F. counted at 48 hours.		
Kind.	Age in days.	
F	120	500
F	120	1,200
W	120	1,180
W	120	700
W	120	833
W	120	730
F	120	890

TABLE VI.

Yolk.		
No. organisms per gram.		
Standard Agar 37° F. counted at 48 hours.		
Kind.	Age in days.	
F	180	132
F	180	1,600
W	180	22,600
F	180	21,400
W	180	34,000

TABLE V.

Yolk.		
No. organisms per gram.		
Standard Agar 37° F. counted at 48 hours.		
Kind.	Age in days.	
F	150	12,800
F	150	4,230
F	150	3,450
F	150	4,025
F	150	6,542
F	150	8,491

TABLE VII.

Yolk.		
No. organisms per gram.		
Standard Agar 37° F. counted at 48 hours.		
Kind.	Age in days.	
F	210	1,100
F	210	1,600
F	210	8,600
F	210	11,500
F	210	15,000
F	210	1,400
F	210	2,100
F	210	14,000
F	210	3,800

BACTERIOLOGICAL EXAMINATION OF EGGS.
Wyandotte and Faverolles Breed (F. and W.).

TABLE VIII.

Yolk.		
No. organisms per gram.		
Standard Agar 37° F. counted at 48 hours.		
Kind.	Age in days.	
F	240	2,000
F	240	6,340
F	240	6,030
F	240	5,093
W	240	13,160
F	240	2,511
F	240	3,601
F	240	2,750
F	240	9,585

TABLE IX.

Yolk.		
No. organisms per gram.		
Standard Agar 37° F. counted at 48 hours.		
Kind.	Age in days.	
F	270	350
F	270	875
F	270	12,800
W	270	5,351
W	270	4,105
F	270	11,626
F	270	12,100
F	270	10,154
F	270	1,215
F	270	3,170

TABLE X.

Yolk.		
No. organisms per gram.		
Standard Agar 37° F. counted at 48 hours.		
Kind.	Age in days.	
F	300	3,946
W	300	2,220
F	300	3,100

BACTERIOLOGICAL EXAMINATION OF
EGGS.
Ten months old—Cold Storage 32° F.

TABLE XI.

Kind.	Age in days.	White and yolk.
		No. organisms per gram.
		Standard Agar 37° F. counted at 48 hours.
F	300	532
W	300	307
F	300	1,500
F	300	2,640
F	300	3,002
F	300	21,000
W	300	1,210
W	300	3,500
W	300	4,302
W	300	8,410

BACTERIOLOGICAL EXAMINATION OF
EGGS.
Wyandotte and Faverolles Breed
(F. and W.).

*TABLE XII.

Kind.	Age in days.	White and yolk.
		No. organisms per gram.
		Standard Agar 37° F. counted at 48 hours.
F	300	46,000
F	300	54,820
F	300	8,300
F	300	230
F	300	82,000
F	300	70,000
F	300	85,000
F	300	110,000
F	300	75,000
F	300	70,000
F	300	54,500
F	300	21,900
F	300	65,000
F	300	72,700

*Eggs stored in ordinary refrigerator.
Average temperature 50° F. for ten
months.

BACTERIOLOGICAL EXAMINATION OF
EGGS.
Wyandotte and Faverolles Breed
(W. and F.).

*TABLE XIII.

Kind.	Age in days.	White and yolk.
		No. organisms per gram.
		Standard Agar 37° F. counted at 48 hours.
F	300	330,000
F	300	212,000
F	300	475,000
F	300	307,000
F	300	303,000
F	300	264,500
F	300	265,000

*Eggs stored in clean wooden box for
ten months. Average temperature 72°
F.

ACKNOWLEDGMENTS.

In the foregoing paper the following literature has been consulted: Bulletin Nos. 103, 87, 128, 115, Circular Nos. 140 and 64, of the United States Department of Agriculture; Bulletin No. 162 of the Kansas State Agricultural College Experiment Station; an article by M. E. Pennington in the Journal of Biological Chemistry of January, 1910; also an article by LaWall and Cassidy, contained in Bulletin No. 183 of the Food Department of the State of Pennsylvania. The writer duly acknowledges all information obtained from the above mentioned sources.

Report of the Division of Sewerage and Water Supplies.

FRANCIS E. DANIELS, A. M., *Chief.*

The Board of Health of the State of New Jersey:

GENTLEMEN—I have the honor to submit the following report of the work of the Division of Sewerage and Water Supplies for the year ending October 31st, 1911.

The work during the year has been continued along the same lines as in the past, and all matters pertaining to sewerage have been kept, as far as possible, separate from matters pertaining to water-supplies. Regular meetings of the technical staff are held, however, and problems relating to both sewerage and water are freely discussed. In this way each one is kept in touch with the work of the whole division and all work in harmony.

The Division endeavors to see that the laws regarding the purity of the waters of the State are enforced, thereby preventing pollution on the one hand, and compelling purification on the other. Our inspectors are constantly patrolling the watersheds and streams, searching out sources of pollution. The offenders are reported, and usually after notices are served, abatements follow. In some instances, abatements do not occur. These cases are referred to the Attorney-General for prosecution and, in a large percentage, abatements occur before suits are brought.

Another feature of prevention of pollution is the work of sewage treatment and disposal. This work is increasing rapidly throughout the State. In October, 1908, there were 39 sewage disposal plants; 1909, there were 63; in 1910, there were 82, and at the present writing, October 31st, 1911, there are 105 plants in operation and six more under construction.

These plants exhibit all of the standard methods of sewage treatment from broad irrigation to the Imhoff tank, and there is a project on foot to install a plant for the treatment of sewage by means of ozone.

The methods of enforcing the laws leading to the installation of sewage disposal plants have been explained in former reports, so that it is only necessary to mention that practically every sewerage system in the State except those in the Passaic valley and near vicinity and a few systems along the Hudson river are "under orders." The municipalities owning these sewerage systems are rapidly taking steps toward the establishment of disposal plants except a few that are awaiting the outcome of the Phillipsburg suit. This case has proceeded as far as the summing up and argument. This was set for September 15th, 1911, but was postponed to await a decision of one of the upper courts.

The following table shows the status of the various municipalities "under orders":

<i>Place.</i>	<i>Ordered to cease pollution prior to</i>	<i>Sewage disposal plans approved.</i>		
Atlantic City (main outlet).....	February 1, 1912.			
Atlantic Highlands	June 1, 1911.	May 11, 1909.		
Avalon	June 1, 1912.	August 8, 1911.		
Beach Haven	June 1, 1912.			
Belvidere (private sewer).....	October 1, 1907.			
Referred to Attorney-General.				
Blairstown (private sewer).....	October 1, 1907.			
Referred to Attorney-General.				
Bogota	January 1, 1914.			
Bound Brook	July 1, 1912.			
Brown's Mills-in-thePines	May 1, 1909.	January 31, 1911.		
Camden	September 1, 1913.			
Cape May	May 15, 1912.			
Cranford	November 1, 1911.			
Delford	January 1, 1914.			
Englewood	January 1, 1914.	April 4, 1911.		
Garwood	December 1, 1908.	June 15, 1909.		
Certiorated by the city of Rahway.				
Gloucester	September 1, 1913.			
Hackensack	January 1, 1914.			
Highland Park	January 1, 1912.			
Jersey City (part of).....	May 1, 1908.			
Referred to Attorney-General.				
Leonia (three sewer companies)...	January 1, 1914.			
Long Branch	May 1, 1909.			
Longport	June 1, 1912.			

<i>Place.</i>	<i>Ordered to cease pollution prior to</i>	<i>Sewage disposal plans approved.</i>		
Mount Holly	January 1, 1911.	June 13, 1911.		
New Brunswick	July 1, 1912.	January 24, 1911.		
New Lisbon	May 1, 1909.			
(Burlington County Asylum.)				
North Wildwood	June 1, 1912.			
Oaklyn (private sewer).....	October 1, 1908.	November 9, 1909.		
Preliminary injunction granted.				
Ocean City	June 1, 1911.	April 25, 1911.		
Phillipsburg	October 1, 1907.			
Case being tried.				
Rahway	October 1, 1911.			
Raritan	July 1, 1911.			
Red Bank	May 1, 1909.			
Referred to Attorney-General.				
Ridgefield	January 1, 1914.			
Ridgefield Park	January 1, 1914.			
River Edge	January 1, 1914.			
Riverton	September 1, 1913.			
Rumson (private sewers).....	June 1, 1911.	July 11, 1911.		
Salem	September 1, 1913.			
Seabright	June 1, 1911.			
Sea Isle City (private sewers)...	November 1, 1911.			
Seaside Park	June 1, 1912.			
Skillman	June 1, 1910.	August 22, 1911.		
New Jersey State Village for Epileptics.				
Somerville	July 1, 1911.			
South Amboy	January 1, 1913.			
Sussex (private sewers).....	October 1, 1912.			
Trenton	January 1, 1913.			
West Hoboken	May 1, 1908.			
Referred to Attorney-General.				
Wildwood	June 1, 1912.			
Wildwood Crest	June 1, 1912.	May 9, 1911.		
Woodlyne	July 1, 1910.	May 18, 1909.		
Under injunction.				

The following places have had plans for sewage disposal plants approved without having been placed under orders:

Place.	Date of approval of plans.
Belmar (part of).....	April 4, 1911.
Beverly	August 10, 1909.
Bradley Beach (part of).....	April 11, 1911.
Cape May Court House.....	October 31, 1911.
Chatham-Madison	August 16, 1910.
Cliffside Park	June 27, 1911.
Fairview	April 18, 1911.
Garfield	April 18, 1911.
Hightstown	August 8, 1911.
Kenilworth	September 5, 1911.
American Circular Loom Company.	
Keyport	January 25, 1910.
Maywood	January 25, 1910.
Monmouth Beach	December 28, 1910.
South River	March 8, 1910.
Stone Harbor	August 8, 1911.
Toms River	February 23, 1911.
Trenton	October 10, 1911.
Agasote Millboard Company.	
Woodbridge (part of).....	October 24, 1911.

In the detailed report of the sewage disposal plants will be found descriptions of plants not described in previous reports and a short statement of the present conditions of each one inspected. As stated above, there are many types and combinations of processes with varied results. In many cases the results are highly satisfactory while in others they are deplorable. In every case poor results are easily explained. Some plants have become hopelessly overloaded on account of rapid increase of population served, while others are simply suffering for the want of proper management and systematic attention. To remedy overloading, enlargement of the plant is necessary, and the present financial conditions of some towns has caused their sewage disposal plants to suffer. However, it is the intention of this Division to use every effort to have overloaded plants rebuilt or enlarged. Haddonfield has recently put into operation the new sprinkling filter, which takes the place of part of its old plant. There are several other plants which should be enlarged at once.

Many times poor results and local nuisances obtain through lack of care or from improper management. It is certainly not

to the credit of engineers when they build complicated disposal plants to go away without instructing the persons who are to take charge as to how the plants should be managed, and yet this very thing has happened several times during the present year. The plants were built and sewage turned on without instructing the attendant what to do. In a few days, complaints from the neighborhood came to our attention and the troubles were remedied in short order.

The Board has recently authorized this Division to send a man to any sewage disposal or water filtration plant needing attention and have him remain there long enough to put it in shape and to instruct the attendant by example, as well as by precept, the proper methods of management. A reference to the report on Haddon Heights will illustrate this point.

Some of our sewage disposal plants discharge their effluents into water-supplies, while others have been installed to protect the shell-fish industry and bathing beaches. These points have been dealt with in former reports.

A few plants have been installed to care for industrial wastes either by themselves or mixed with domestic sewage.

What the results of the proposed ozone process will be, remains to be seen. A private company has offered to install a unit to treat 1,000,000 gallons per day of the sewage of Trenton, and the results of this trial are eagerly awaited by the writer.

Considerable work has been done during the year in regard to water-supplies throughout the State.

There are in the State of New Jersey 188 plants supplying water to 366 towns. Of these towns, 142 receive a treated water, either filtered or disinfected. In 11 cases the water is filtered for the removal of iron; of these, 9 use rapid sand filters (5 pressure and 4 gravity), and 2 use slow sand filters. In 23 towns surface water is filtered for the removal of color and bacteria. Of these, 18 plants use rapid sand filters (4 pressure and 14 gravity), and 5 plants use slow sand filters. Five plants treat surface water with calcium hypochlorite.

In many cases the plants are well managed and in good shape, while in others a combination of poor equipment and bad management has given poor results. It is now the policy of this Division to have a man instruct the attendant how his plant should be

run to give the best results. Already this has been done in several cases and good results have been accomplished. In some instances where necessary equipment has been lacking, the owners have appreciated our efforts and have procured additional apparatus and materials to work with. At the State Village for Epileptics, the mechanical filter was in poor shape. In order to eliminate *B. Coli* pending the overhauling of the filter plant it was decided to add hypochlorite. We telephoned to Philadelphia for the chemical and sent out men to Skillman. In a few hours an emergency disinfecting plant was installed and is still in operation. The water system was thoroughly disinfected and the filtration plant put in good order.

There exists one serious source of danger at some of the filtration plants. I refer to by-passes.

We have frequently found by-passes open and polluted raw water being pumped directly into the distributing mains, while little or no water was being filtered. The Board has recently authorized this Division to have these by-passes sealed.

These seals shall not be broken, under penalty of action in the Court of Chancery, except in case of dire necessity, and then only with the consent of the State Board of Health. At such times every precaution shall be taken to protect the water consumers from danger and to prevent an outbreak of disease.

Many of the untreated surface supplies are in need of careful attention. As the population upon the watersheds increases, danger of contamination becomes more and more imminent. No untreated or improperly stored surface water collected from a populated watershed is a safe supply, and many a supply once perfectly safe, or reasonably so, has become dangerous in its raw state on account of recent pollutions upon the watershed.

There are several supplies in the State which at least need disinfection or, better still, disinfection combined with filtration.

As stated below, the watersheds are being reinspected and every effort will be made to clean them up.

The following list shows the water-supplies established during the year:

Town.	Date.	Applicant.	Source.
Bernards township.....	Aug. 22, '11.....	Somerset Spring Water Co.....	Spring.
Brant Beach.....	June 13, '11.....	Beach Haven Realty Co.....	Artesian well.
Bridgeport.....	Aug. 8, '11.....	Bridgeport Water Co.....	Four drilled wells, 43-80 ft. deep
Bridgeton.....	Jan. 31, '11.....	City of Bridgeton.....	Tumbling Dam pond.
Crosswicks.....	June 6, '11.....	Crosswicks Water Co.....	Springs.
Elmer.....	Aug. 22, '11.....	Elmer Water Co.....	One drilled well, 65 ft. deep.
Haddonfield borough.....	June 6, '11.....	Borough of Haddonfield.....	Spring.
High Bridge.....	Dec. 13, '10.....	Borough of High Bridge.....	Willoughby brook.
Hohokus.....	May 16, '11.....	Albert Winter.....	Spring.
Hopewell.....	Oct. 10, '11.....	John G. Burton.....	Driven well, 113 ft. deep.
Kenilworth.....	Oct. 10, '11.....	Borough of Kenilworth.....	Driven well, 275 ft. deep.
Kirkwood.....	Aug. 22, '11.....	Lakeside Park Land Co.....	Artesian well.
Millford.....	Nov. 29, '10.....	Town of Millford.....	Dug well.
Mountain Lakes.....	July 25, '11.....	Hillcrest Water Co.....	Drilled well, 340 ft. deep.
Sewell.....	Aug. 22, '11.....	Sewell Water Co.....	Artesian well.
Spring Lake.....	Mar. 14, '11.....	Borough of Spring Lake.....	Artesian wells.

Stream inspections have been continued as rapidly as the size of our force will permit. There are over 7,500 square miles of territory for the three inspectors to cover. During the summer we employed extra inspectors and made a complete inspection of ocean front and tributaries from Sandy Hook to Cape May. The offenders have been given a reasonable time in which to cease polluting the waters.

To letters sent out by the Attorney-General in regard to cases referred to him for prosecution, replies have been received. In the majority of cases, there have been promises to comply with the law. All of these cases are being reinspected together with the neighboring territories.

The State has been divided by counties into three sections of about 2,500 square miles each, and an inspector assigned to each section.

A complete reinspection of the State is in progress in this order of importance: First, watersheds; second, waters adjacent to shell-fish industries; and third, the remaining territory.

As about one-fourth of each inspector's time is devoted to collecting water samples from public supplies, one can readily see that our force is entirely too small.

The following list of waters inspected during the year will, however, give an idea of what is being done:

Absecon inlet, Atlantic ocean, Baldwin's run, Barnegat bay, Cold Spring inlet, Cornell harbor, Corsons inlet, Deal lake, Delaware bay, Delaware river, Elizabeth river, Great Egg Harbor bay, Great Egg Harbor inlet, Green pond,

Hackensack river, Hereford inlet, Hohokus brook, Inside Thorofare (Sea Isle City), Lake Hopatcong, Lakes bay, Ludlam Thorofare, Ludlam bay, Manahawkin bay, Manasquan river, Mantua creek, Maurice river, Middle brook, Musconetcong river, Navesink river, Overpeck creek, Passaic river, Paulins Kill, Pequannock river, Pequest river, Pohatcong creek, Pompton lake, Raccoon creek, Rahway river, Rancocas creek, Raritan bay, Raritan river, Sea Girt inlet, Second river, Scragley's creek, Shark river, Shrewsbury river, South Plainfield pond, Swimming river, Toms river, Townsend inlet, Tuckerton bay, Walkill river, Wesley lake and the Whippany river.

One of the most important features of the work of the Division is the work done in the laboratory.

Routine chemical and bacterial analyses are made on water and sewage according to the standard methods described in previous reports. On account of the lack of space, only the routine work can be done. The laboratory is well equipped with apparatus, part of which is well-nigh useless on account of the want of proper room. No experiments or investigations can be done to any extent—a class of work which is becoming a necessity. A new laboratory building with an experiment station for investigations in the purification of water, sewage and trades wastes is urgently needed.

During the year valuable additions have been made to our library, but there is needed a room in which one can consult the books undisturbed.

The following is a short summary of the work done during the year:

Water-supply inspections	421
Special water-supply inspections	68
State institution water-supply inspections.....	25
Proposed public water-supply inspections.....	10
Spring water-supply inspections	30
Sewerage system inspections	347
Special sewerage system inspections.....	122
State institution sewerage system inspections.....	15
Water-supply plans approved	24
Water-supply plans disapproved	3
Bottled water-supply plans approved	3
Bottled water-supply plans disapproved.....	2
Sewerage plans approved	68
Sewerage plans disapproved	6
Number of pollutions reported	1,667
Number of reinspections made.....	1,056
Number of pollutions abated	485
Number of municipalities notified to cease pollution.....	8
Number of notices to cease pollution served.....	1,140
Number of cases referred to the Attorney-General.....	99

Samples analyzed from the following:

Public water-supplies.....	1,053
Private water-supplies.....	426
Proposed water-supplies.....	23
Spring water-supplies.....	66
State institution water-supplies.....	83
Dairy wells.....	27
Creamery wells.....	5
Sewage	201
Miscellaneous	50
Total	<u>1,934</u>

Official Actions.

THE FOLLOWING IS A BRIEF SUMMARY OF THE ACTIONS TAKEN BY THE BOARD
RELATIVE TO MATTERS PERTAINING TO SEWAGE.

ALPHA.—In January, 1911, complaints were received from residents of Springtown, to the effect that the stream flowing through Springtown was being seriously polluted by oily wastes discharged from the works of the Alpha Portland Cement Company, at Alpha.

On January 25th, 1911, an inspection was made. It was learned that the company had installed a collecting basin since receiving a notice from this Board to cease polluting the stream. The report at this time seemed to indicate that there might be some contamination during heavy storms, but that this would be serious seemed unlikely.

Upon receiving further complaint, our engineer was sent to Alpha to investigate. It was then found that a large amount of storm water was allowed to flow into the separating tanks, thereby making it impossible to control the output during a storm.

The necessity of cutting off the storm water was taken up with the company, and, by appointment, our engineer went carefully over the ground with the secretary and treasurer of the company and showed how the proper changes should be made. These changes the company promised to make.

ASBURY PARK.—On March 28th, 1911, a report of inspection of the sewer system was ordered sent to the City Council and to the Superintendent of Sewers.

On August 22d, 1911, plans and specifications submitted by Messrs. Twombly & Henney for additions to and changes in the sewerage system and sewage disposal plant were approved subject to the usual conditions.

ASYLA.—On December 28th, 1910, the condition of the sewage disposal plant for the Camden county institutions was reported to the Board. This was referred to Senator Johnson, and on February 21st, 1911, proposed changes in the sewage disposal plant were approved subject to certain modifications.

ATLANTIC HIGHLANDS.—On December 13th, 1910, a resolution was adopted that the borough be notified to cease to pollute the waters of Sandy Hook bay prior to June 1st, 1911.

AVALON.—On November 15th, 1910, it was ordered that the borough be notified to show cause on December 20th, 1910, why it should not be notified to discontinue to discharge sewage into the waters of Beach creek.

On December 20th, 1910, it was ordered that plans for taking care of the sewage be presented on April 11th, 1911.

On April 18, 1911, plans for sewage disposal were submitted and returned to authorities of said borough for revision.

On August 8th, 1911, plans for sewage disposal were approved subject to the usual conditions, but the plans for a collecting system of sewers were disapproved.

On October 10th, 1911, amended plans for sewer extensions were presented and held for further revision.

BELMAR.—On April 4th, 1911, plans for extensions to the sewerage system were approved subject to the usual conditions.

On April 11th, 1911, the case against the Coast Gas Company was referred to the Attorney-General for prosecution.

BOGOTA.—On January 25th, 1911, an inspection of the sewerage system was made.

On January 26th, 1911, a more thorough inspection of the sewers was made and advice to relieve the existing evils was given.

BOUND BROOK.—On June 27th, 1911, the time prior to which the borough must cease to pollute the Raritan river was extended to July 1st, 1912.

BRADLEY BEACH.—On April 11th, 1911, motion was made and carried that plans for a collecting system of sewers and a sewage disposal plant for the southerly part of the borough be approved subject to the usual conditions, provided that all manholes be ventilated and that flush tanks be installed at the dead ends of all laterals.

BROWN'S MILLS-IN-THE-PINES.—On January 3d, 1911, it was voted that the engineer who designed the sewage disposal plant be notified that further provision must be made to disinfect the effluent.

On January 10th, 1911, notice was ordered to be sent to the engineer, that in place of secondary treatment, the Board would agree to an enlargement of the primary contact beds and subsequent disinfection of the effluent.

Plans for the disposal plant were approved on January 31st, 1911, subject to the usual conditions.

BURLINGTON.—On April 11th, 1911, the Board ordered that notification be sent to the officials of the sewage disposal plant, instructing them to place the plant in a satisfactory condition.

On October 10th, 1911, it was ordered that the American Pipe Manufacturing Company be notified to put the sewage disposal plant in a satisfactory condition.

CAMDEN.—On May 29th, 1911, an inspection was made of the waste discharge from the manufacturing plant of the Atlas Cereal Company. It was found that this waste liquor was polluting Baldwin's run. This company has since arranged to discharge the waste into the Camden sewer.

On October 24th, 1911, plans for sewer extensions submitted to the Board for approval, were ordered to be returned to the city authorities for revision.

CAPE MAY.—Representatives of the city appeared before the Board on August 22d, 1911, to explain the cause of delay in selecting a site for a sewage disposal plant. The Board voted an extension of time before placing the matter in the hands of the Attorney-General, on condition that the city purchase a pumping station site before October 1st, 1911; that plans for a disposal plant be submitted to the Board, and contracts let before January 1st, 1912, and that the plant be installed and in operation before May 15th, 1912.

CAPE MAY COURT HOUSE.—An inspection made on May 20th, 1911, indicated that the proposed treatment of the sewage from the county buildings by disinfection was insufficient, as the stream to receive the effluent was not large enough to care for the sewage solids by dilution properly.

The plans for a disposal plant which were rejected on May 16th, 1911, were again presented to the Board in an amended form on September 27th, 1911, and were approved subject to the usual conditions.

CLIFFSIDE PARK.—Preliminary plans for a sewage disposal system were presented to the Board on March 28th, 1911, by the engineers representing the borough. On April 18th, the Board held a hearing for the benefit of people interested in the matter. Amended plans for a disposal system were approved

by the Board on June 27th, subject to the usual conditions and also subject to the elimination from the plans of certain by-pass pipes.

CLINTON.—On April 11th, 1911, the Board ordered that the officials in charge of the disposal plant be notified to improve the condition of the plant without delay.

COLLINGSWOOD.—On March 7th, 1911, the Board approved plans for an extension to the sewage settling tank subject to the usual conditions.

Plans for sewer extensions which were submitted to the Board and approved in 1909, were changed without approval during construction in the following year.

On September 27th, 1911, this matter was referred by the Board to the Attorney-General for such action as the law provides.

On February 27th, 1911, the Board ordered that the Collingswood Sewerage Company be notified to put its sewage disposal plant in proper working condition.

On October 17th, 1911, the Board ordered that the Collingswood Sewerage Company be notified to install additional contact beds at its sewage disposal plant prior to May 1st, 1912.

An inspection made on August 28th, 1911, showed that wastes from the Enterprise Wall Paper Company were polluting Newton creek.

COLT'S NECK.—On December 6th, 1910, plans for a disposal plant for the treatment of waste liquids from the creamery operated by H. S. Wilson, were approved subject to the usual conditions.

CRANFORD.—On August 22d, 1911, plans for a sewage disposal system for Normandie Park were referred back to the Normandie Park Realty Company, with instructions to obtain the approval of the borough authorities for the connection of the sewers with the borough system.

On October 17th, 1911, plans for an extension to the sewers of the borough were approved subject to the usual conditions and with the proviso that the authorities be notified that the Board "cannot approve of further extensions until all ground water is cut off from the sewer pipes."

On October 24th, 1911, the Board ordered that the borough authorities be requested to inform the Board within thirty days as to the acceptance or rejection by its committees of plans for disposing of the sewage of Cranford and neighboring districts.

ENGLEWOOD.—On April 4th, 1911, plans for a sewage disposal plant for the Englewood Sewerage Company were approved subject to the usual conditions, with the proviso that a system for the secondary treatment of the sewage be installed prior to January 1st, 1914, and that a by-pass, shown on the plans, be removed.

FAIRVIEW.—On April 18th, 1911, plans for a collecting system of sewers and a sewage disposal plant were approved by the Board subject to the usual conditions.

FORT LEE.—Plans for sewer extensions were approved by the Board, subject to the usual conditions, on the following dates: June 27th, July 25th, August 22d and October 10th, 1911.

On October 24th, the Board ordered that the Borough authorities be notified to submit plans of the sewers in the Palisades section of said borough, and show changes proposed to be made to improve defects in said sewers.

GARFIELD.—On April 18th, 1911, plans for a sewage disposal plant were approved by the Board subject to the usual conditions and also subject to the elimination of a by-pass, shown on the plans.

GLEN GARDNER.—On April 11th, 1911, the Board ordered that notification be sent to the officials of the disposal plant of the New Jersey Sanatorium for Tuberculous Diseases, instructing them to put the plant in a satisfactory condition without delay.

HADDON TOWNSHIP.—On September 27th, 1911, plans for a sewer system for a portion of the township, were presented to the Board and rejected as unsatisfactory.

HIGHLAND PARK.—On May 16th, 1911, the Board granted an extension of time until January 1st, 1912, in which to install a sewage disposal plant, there being numerous objections to the original site for the plant.

HIGHTSTOWN.—On August 8th, 1911, plans for a sewage disposal system were approved subject to the usual conditions and subject to the dosing of the beds intermittently.

HOLLY BEACH.—On November 15th, 1910, the Board ordered that plans for a sewage disposal plant be submitted and the plant installed prior to June 1st, 1911.

On December 20th, 1910, the Board ordered the borough authorities to appear before it on the second Tuesday in April, 1911, to present a plan for taking care of the sewage of the borough.

KENTLWORTH.—On September 5th, 1911, the Board approved plans for a sewage disposal plant for the American Circular Loom Company, subject to the usual conditions.

KEYPORT.—On September 5th, 1911, the Board prohibited the authorities from laying sewers in close proximity to water-supply wells, until plans for protection of the wells were submitted to the Board for approval. On October 24th, 1911, permission was given by the Board to lay sewer pipes near the wells in question providing piping of a certain specified type be used.

LAKEWOOD.—On December 6th, 1910, the matter of the pollution of the Metedeconk river and its tributaries by wastes from the Lakewood Gas Company, was referred to the Attorney-General.

On March 28th, 1911, the Board ordered the matter of the pollution of the Metedeconk river by the sewer system of the Lakewood Water, Light and Power Company, to be referred to the Attorney-General for prosecution.

MARGATE CITY.—On February 21st, 1911, the Board approved the revised plans for a chemical house to be built in connection with the sewage works.

MEDFORD.—On March 21st, 1911, the Board approved plans for a sewage disposal plant for a private sewer on Bank street, subject to the usual conditions.

MERCHANTVILLE.—On February 27th, 1911, the Board ordered that the authorities be notified to put the sewage disposal plant in proper condition.

MONMOUTH BEACH.—On December 28th, 1910, plans for a sewage disposal system were approved by the Board, subject to the usual conditions.

MOUNT ARLINGTON.—On July 25th, 1911, the Board issued an order requiring the proprietor of the New Breslin Hotel to reconstruct the sewage disposal system of the hotel at an early date, in a manner to meet the approval of the Board, and also requiring him to discontinue at once the pollution of Lake Hopatcong from the hotel properties.

MOUNT HOLLY.—On June 13th, 1911, amended plans for a sewage disposal plant were approved by the Board subject to the usual conditions.

NEPTUNE TOWNSHIP.—On September 19th, 1911, the Board instructed its secretary to communicate with the authorities of the township, informing them as to the poor condition of the sewer system.

NEW BRUNSWICK.—On January 24th, 1911, plans for a sewage disposal plant were approved subject to the usual conditions and with the proviso that the by-passes in the Burnett and Mile Run Brook plants be eliminated, and that further plans be submitted showing the exact location of the plants.

On February 7th, 1911, the Board approved the retention of the by-passes in the sewage disposal plants, subject to certain conditions.

On June 27th, 1911, the Board granted an extension of time to July 1st, 1912, prior to which date the city must cease polluting the waters of the Raritan river.

On August 22d, 1911, amended plans for extensions to the sewers on Seaman, Redmond, Sanford, Howard, Talmadge, Morris and John streets, and on Lee avenue, were approved by the Board subject to the usual conditions and subject to the installation of a manhole on Redmond street.

NEW LISBON.—On February 27th, 1911, the Board ordered that the condition of the sewage disposal plant be improved in accordance with recommendations made by this Division.

NORTH PLAINFIELD.—Plans for a sewage disposal plant were presented to the Board on December 13th, 1910.

On March 28th, 1911, representatives of North Plainfield appeared before the Board in support of a site for the proposed sewage disposal plant. As the map of the site was not complete, the Board requested more detailed plans showing the collecting and outfall systems of sewers. These plans were accordingly presented to the Board on April 4th, 1911. This Division was asked to examine the plans and report to the Board as to their suitability on April 11th, 1911. After consideration of the matter, the Board voted on April 18th, 1911, its disapproval of the plans as presented.

On August 22d, 1911, the Board instructed its secretary to confer with the Attorney-General as to what course of action should be followed relative to the proposed sewage disposal plant.

NORTH WILDWOOD.—On November 15th, 1910, the Board ordered that the authorities of North Wildwood be requested to appear before it on December 20th, 1910, to show cause why notification should not be served requiring the borough to discontinue polluting the waters of Post creek. The Board further ordered on December 20th, 1910, that representatives of the borough should appear before it on the second Tuesday in April, 1911, with a plan for disposing of the sewage from said borough.

OCEAN CITY.—Preliminary plans for a sewage disposal system were approved on March 14th, 1911, subject to the usual conditions and subject to the submission of detailed plans to the Board at a later date. Plans of the tanks for the sewage disposal plant were approved on April 25th, 1911, subject to the usual conditions and subject to the submission to the Board at a later date of detailed plans of the collecting and outfall sewers. On May 16th, 1911, the plans of an intercepting and outfall sewer were approved by the Board subject to the usual conditions.

PEERMONT.—At a meeting held November 15th, 1910, the Board voted that the authorities be notified to appear before it on December 20th, 1910, to show cause why Peermont should not be notified to cease discharging sewage into the waters of the Great Sound and its tributaries.

PEMBERTON.—On February 27th, 1911, the Board ordered that the sewage disposal plant be improved in accordance with the recommendations made by this Division.

PHILLIPSBURG.—On September 5th, 1911, the Board rejected an application for sewer extensions, believing it advisable to await a decision in the suit instituted by the Board against the city, relative to the disposal of sewage from the city.

On October 17th, 1911, the Board instructed its secretary to communicate with the city authorities requesting them to file plans for a dual sewer system on Thomas street, and stating that when said plans have been filed and have been approved by the Board, permission would be granted to carry out said extensions.

PRINCETON.—On January 3d, 1911, the Board ordered that the authorities be notified to remedy at once the conditions at the northeast sewage disposal plant, or the matter would be placed in the hands of the Attorney-General for prosecution.

On April 4th, 1911, the Board ordered that a copy of a report of an inspection, showing that sewage was being discharged from the northeast sewage bed without proper purification, be forwarded to the authorities with instructions that, if action was not taken at once to remedy the conditions referred to, the matter would be placed in the hands of the Attorney-General.

Plans for sewer construction on Cleveland Lane were approved by the Board on June 27th, 1911, subject to the usual conditions.

On August 8th, 1911, the Board ordered that the matter of the pollution of the waters of Carnegie lake by unpurified sewage from the disposal plant, be referred to the Attorney-General for prosecution.

RAHWAY.—On August 22d, 1911, the Board disapproved of the plans for various sewer extensions on the ground that the outfall sewer was insufficient in size to carry any increased flow of sewage.

These plans were altered by the authorities and in an amended form were presented to the Board, and received approval on September 5th, 1911, subject to the notice already presented to the city requiring it to cease polluting the Rahway river prior to October 1st, 1911.

On November 29th, 1910, the Board approved amended plans showing the final location of the sewage disposal system of the New Jersey State Reformatory.

RED BANK.—The borough having been ordered to purify further its sewage prior to May 1st, 1909, and having failed to comply with this order, the Board on December 6th, 1910, referred the matter to the Attorney-General for such action as the law provides.

Steps are now being taken to comply with the above orders.

RIDGEWOOD.—On February 27th, 1911, the Board ordered that the sewage disposal plant be improved in accordance with the recommendations made in a report to the Board by this Division.

Plans for additions to the sewage disposal plant were approved by the Board on April 18th, 1911, subject to the usual conditions.

RIVERTON.—On July 25th, 1911, the Board approved of the means of disposing of sewage proposed by the authorities with the understanding that further purification may be required at a future date.

Plans for sewer extensions on various streets were approved subject to the notice already given to the borough to cease polluting the Delaware river prior to September 1st, 1913, and subject to the construction of a manhole at a specified location.

RUMSON.—On December 13th, 1910, the Board ordered the Rumson Land and Development Company to cease polluting the waters of the Shrewsbury river prior to June 1st, 1911.

Plans for a sewage disposal plant for the Rumson Land and Development Company were presented to the Board for approval, but were referred back for further investigation on April 11th, and on April 18th, 1911. These plans in a revised form were finally approved by the Board on July 11th, 1911, subject to the usual conditions.

SEA BRIGHT.—On December 13th, 1910, the Board ordered that the borough of Sea Bright be notified to cease polluting the waters of the Shrewsbury river prior to June 1st, 1911.

SEA ISLE CITY.—On December 6th, 1910, the Board approved the preliminary plans for a collecting system of sewers subject to the usual conditions.

The residents of Sea Isle City have already been notified to cease polluting Ludlam's bay, Ludlam's Thorofare and Scragley's creek. The time limit on this order was extended to November 1st, 1911, upon recommendation made at a Board meeting held on January 24th, 1911.

SECAUCUS.—On April 4th, 1911, the Board ordered that the plans for a surface drainage system be referred back to this Division and that the authorities be instructed to submit more detailed plans and specifications of this system.

SKILLMAN.—Plans for a sewage disposal system for the New Jersey State Village for Epileptics were approved by the Board on August 22d, 1911, subject to the usual conditions.

SMITH'S LANDING.—On December 13th, 1910, the Board approved plans for a sewage disposal plant for the Atlantic County Insane Asylum subject to the usual conditions. It was also voted, however, that the Asylum authorities be informed that if this plant as proposed was not properly operated, the Board would require further purification of the sewage by sand filtration or some other approved system.

STONE HARBOR.—On February 21st, 1911, preliminary plans for a sewage disposal system were approved by the Board subject to the usual conditions, with the proviso that detailed plans of the system must be submitted at a later date.

On August 8th, 1911, plans for a sewage disposal plant were approved subject to the usual conditions. The plans for the collecting system of sewers considered at the same time, were rejected by the Board.

On October 10th, 1911, amended plans for sewer extensions at Stone Harbor were referred to this Division for consideration.

SWEDESBORO.—After listening to representatives of the Swedesboro Sewer Company with reference to the discharge of sewage by the borough into the waters of Raccoon creek, the Board, at a meeting held on October 10th, 1911, decided that the order requiring this company to cease polluting this creek prior to January 1st, 1913, should stand.

THREE BRIDGES.—On April 11th, 1911, the Board ordered that notification be sent to the officials in charge of the sewage disposal plant, requiring them to put the same in a condition satisfactory to the Board without delay.

TOWNS RIVER.—On February 21st, 1911, the Board approved plans for a sewage disposal system subject to the usual conditions.

TRENTON.—Plans for sewer extensions were approved, subject to the usual conditions, on December 6th and December 28th, 1910.

The Board voted on January 31st, 1911, that no further sewer extensions would be granted until the city complied with the order to cease polluting the Delaware river.

On March 14th, 1911, a resolution was adopted by the Board requiring the city to cease polluting the Delaware river prior to January 1st, 1913.

Further sewer extensions, subject to the notice to cease polluting the Delaware river prior to January 1st, 1913, were granted by the Board on the following dates: March 14th, May 2d, May 23d, June 6th and July 25th, 1911.

Representatives of the city and others interested in the installation of a plant for the purification of sewage with ozone, appeared before the Board on September 5th, 1911. The Board, after considering, decided to grant the city time until December 1st, 1911, in which to present a method for taking care of its sewage.

Plans for a sewage disposal plant for the Agasote Millboard Company were approved by the Board on October 10th, 1911, subject to the usual conditions, and subject to elimination of by-pass pipe.

VENTNOR.—On January 31st, 1911, the Board approved plans for sewage disposal plants for Ventnor Park and on Cornwell avenue, subject to the usual conditions.

VINELAND.—On October 10th, 1911, the Board decided that the method of sewage disposal proposed for the Training School for Feeble-Minded Children would be acceptable, and that detailed plans would not be required, as with broad irrigation, provision need not be made to care for the effluent.

WESTFIELD.—On April 18th, 1911, the Board ordered that the attention of the officials be called to the defects of the sewage disposal plant and that steps be taken to improve the plant.

WILDWOOD.—At a meeting held on November 15th, 1910, the Board voted that the authorities be requested to show cause at a meeting to be held on December 20th, 1910, why they should not be notified to cease discharging sewage into the waters of Post creek.

On December 20th, 1910, the Board requested the authorities of Wildwood to appear before them on the second Tuesday in April, 1911, and present a plan for taking care of the sewage of the borough.

WILDWOOD CREST.—On November 15th, 1910, the Board ordered that plans for a sewage disposal plant be submitted and that the plant be installed prior to June 1st, 1911. The Board on December 20th, 1910, further ordered the borough authorities to appear before it on the second Tuesday in April, 1911, and present a plan for taking care of the sewage from said borough. In response to this order, the Wildwood Crest Improvement Company, at a meeting on April 25th, presented plans for a system of collecting sewers. The Board would not accept these plans until plans for a disposal plant were first presented for approval. The company soon afterward handed in the required plans, and on May 2d, 1911, these plans were referred to this Division for consideration.

Plans for the collecting system of sewers were approved by the Board on May 9th, 1911, subject to such conditions of construction and operation as the Board may from time to time require, and subject to the submission of plans for a sewage disposal plant at a later date, and with the proviso that the collecting sewers should not be used until the plans for the disposal plant were approved by the Board.

On May 16th, 1911, the Board approved plans for a sewage disposal plant for the Wildwood Crest Improvement Company subject to the usual conditions.

Plans for sewer outlets in the borough were on May 23d, 1911, referred by the Board to this Division.

WOODBIDGE TOWNSHIP.—Plans for sewer construction on Woodbridge avenue were disapproved by the Board on August 8th, 1911, as there was no provision made for purifying the sewage.

Plans for treating the sewage from the Woodbridge avenue sewer were rejected by the Board as unsatisfactory, on September 12th, 1911.

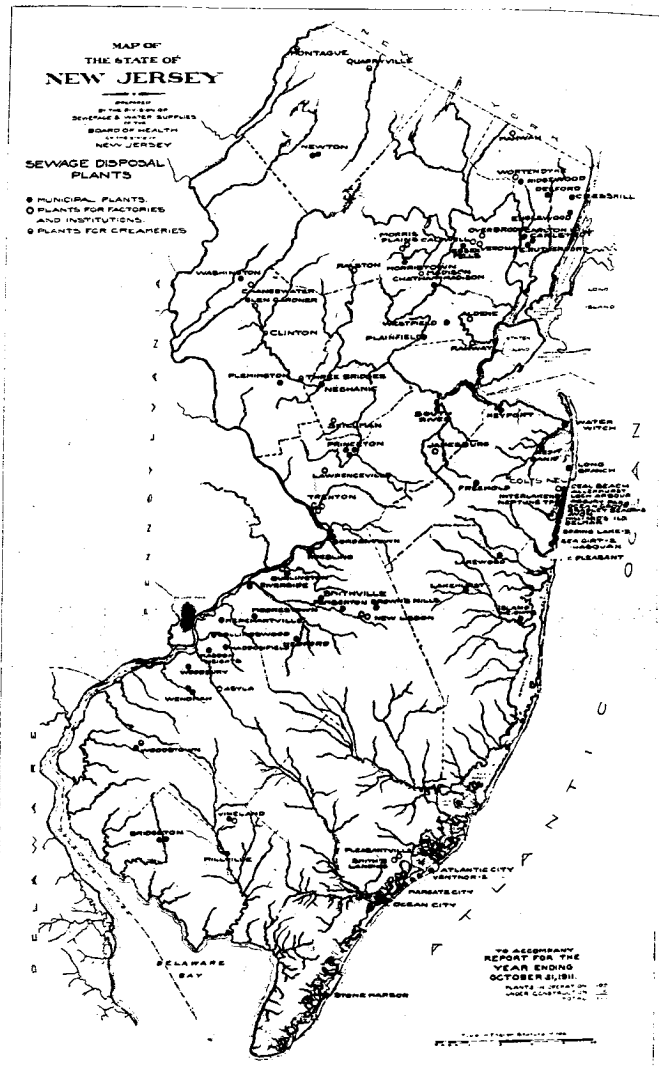
On October 17th, 1911, the Board approved plans for a private sewer and disposal works for a portion of Woodbridge, subject to the usual conditions.

On October 24th, 1911, the Board approved, subject to the usual conditions, plans for a septic tank to be located at the outlet of the sewer on Woodbridge avenue.

WOODLYNNE.—On September 12th, 1911, the Board ordered that the authorities be notified to submit immediately plans of the piping which was being laid in several streets of the borough, in violation of the law.

The plans requested were later submitted, and on September 27th, the Board voted to await a report from this Division before acting on the matter, which report showed that work upon the laying of sewers had ceased.

WOODSTOWN.—Plans for a disposal plant for the treatment of wastes from the creamery of the Supplee Alderney Dairy were approved on June 13th, 1911, subject to the usual conditions.



Report on the Sewage Disposal Plants in Operation or Under Construction in New Jersey, October 31st, 1911.

MAURICE R. SCHARFF, M. S., *Field Assistant.*

Mr. F. E. Daniels, Chief, Division of Sewerage and Water Supplies, Board of Health of the State of New Jersey, Trenton, New Jersey:

DEAR SIR—I beg to submit the following report on the sewage disposal plants of the State, covering the work that has been done during the past year, and the condition of each plant so far as is known at this time:

ALDENE.—Watson-Stillman Company. To handle sewage from its factory, the Watson-Stillman Company has installed a small plant comprising a septic tank and a cinder filter.

The sewage is run into the suction well of a steam ejector, which raises it about once an hour to the tank. This tank is 16 feet by 20 feet and 12 feet deep to the flow line. It overflows to the filter, which is 6 feet by 20 feet, and filled to a depth of one foot with cinders.

ALLENHURST.—The disposal plant at Allenhurst consists of a brick chamber, approximately 30 feet by 45 feet and 12 feet deep, situated below Ocean road at the corner of Elberon avenue, with its top about 4 feet below the roadway. It is divided into two unequal compartments, both of which are in constant use. The effluent is carried out to sea through an 8-inch outfall 800 feet long. There is an emergency overflow of 6-inch pipe, extending 50 feet into the sea, for use in case the main outfall becomes stopped.

An inspection made December 27th, 1910, showed that the tanks needed cleaning, and this was requested.

A reinspection on March 18th, 1911, showed that the tanks had been cleaned, and on July 1st, 1911, the plant was again inspected and reported in satisfactory condition, producing a somewhat cloudy effluent, but no odor.

ASBURY PARK.—Ross-Fenton Farm. The plant for disposing of the sewage and sink wastes from the Ross-Fenton Farm at Asbury Park, comprises a small septic tank, a siphon tank and an underground filter of sand and cinders.

The septic tank is circular, 5 feet 4 inches in diameter, and 6 feet 8 inches deep, drawn in at the top to a manhole ring. The sewage enters below the surface through a T-branch, and a scum wall protects the effluent pipe.

The siphon chamber is a circular well 4 feet 2 inches in diameter and 4 feet 8 inches deep, drawn in to fit a manhole ring at top. The tank is discharged intermittently to the filter by a 3-inch Miller Automatic Siphon.

The filter is 22 feet by 4 feet, with its bottom 10 feet under ground, and is filled to a depth of 4 feet 9 inches with gravel, cinders and sand. The effluent flows into Deal lake.

The plant was inspected July 18th, 1911, and appeared to be in satisfactory condition.

ASBURY PARK.—The Asbury Park septic tank is described in the State Board of Health Report for 1909, p. 227. This plant was inspected March 24th and June 29th, 1911, and it was found that the tank has been much of the time by-passed because of the obnoxious odors from the screen-chamber. As a result, complaints of the condition of the water on the beaches have been made. Plans have been filed for the improvement of the system by better flushing of the sewers, new screens, resetting pumps, improving distribution in tank and proper drainage of all sumps and manholes, and it is expected that conditions will be more satisfactory by next season.

ASYLA.—Camden County Institutions. The sewage disposal plant serving the Camden County Insane Asylum and the Almshouse, consisting of a screen-chamber, septic tank, primary and secondary gravel beds, has been described in the State Board of Health Report for 1909, p. 228.

The plant was inspected December 14th and December 17th, 1910, also on January 12th, April 18th, June 22d, September 12th and October 9th, 1911. In each of the last three cases, it was reported that the distribution on the beds was unsatisfactory, and the superintendent has been repeatedly urged to improve it. At the last inspection, however, no improvement was reported.

The superintendent has agreed to make daily putrescibility tests of the effluent, but at the last inspection had not yet commenced them.

ATLANTIC CITY.—The hypochlorite disinfection plant for the treatment of the sewage of the Chelsea district of Atlantic City, is situated at the end of Raleigh avenue near the Thoroughfare, and was put in operation about August 10th, 1911.

The plant consists of two underground retention chambers, each about 6 feet by 8 feet and 10 feet deep, separated by a wall in which there is a rectangular orifice which can be regulated by a gate. One tank receives the sewage and the other is connected by the outfall pipe with tide-water in the Thoroughfare. The hypochlorite solution is mixed in a concrete tank and run into one of two storage tanks, connected with a dosing box, in which a constant level is maintained by a float-valve. The orifice between the retention chambers is so throttled that there is a slight excess of head in the tank on the sewer side at times of minimum flow through the orifice, and a floating discharge pipe in the dosing box is so controlled through differential gears by floats on both sides of the orifice, that the flow of bleach solution is cut off when the tidal head is in excess, and varies with the excess head on the other side of the orifice. The effluent is discharged through a 16-inch pipe below low water into the Thoroughfare, a few feet from the bank.

There is no adequate provision for mixing the sewage with the disinfectant, and little or no storage before final discharge.

The plant was inspected July 1st, September 9th, September 18th and October 20th, 1911. During September, the automatic control apparatus was found out of order, but everything has since been put in good shape.

During the summer, about 42 pounds of hypochlorite are used each day, yielding about 13 parts per million of available chlorine on the estimated

flow of 160,000 gallons per day. Bacteriological tests by the American Water Softener Company and by this Board do not show very complete removal of bacteria, probably because of improper mixing and retention.

AVON.—The septic tank at Avon was described in the State Board of Health Report for 1909, p. 229.

Inspections were made December 23d, 1910, March 18th and July 1st, 1911. As a result of the first inspection, the tank was cleaned out, and has since been reported in satisfactory condition.

BELMAR.—The sewage disposal plant at Belmar is located under Ocean avenue, near the main Belmar pavilion, and was put in operation about June 1st, 1911. It consists of three concrete tanks, each 20 feet by 110 feet and 7 feet 6 inches deep on the average, each provided with a concrete scum wall near the inlet, and a longitudinal baffle to make the whole tank effective. Outlets for cleaning are provided near the point at which the sewage enters. The effluent is discharged through an iron pipe extending 500 feet into the sea.

At the first inspection on July 3d, 1911, it was found that the cleaning outlets were open, and sewage was passing directly through one end of the tanks without storage. This was remedied, but on August 1st, investigation of a complaint regarding smell from the plant, discovered a break in the outfall. Subsequent inspections on August 7th, 9th, 10th, 12th, and October 5th, 1911, discovered several more breaks, and it has been repeatedly urged that a thorough inspection of the whole outfall be made, and that a new pipe be laid if necessary, but at the last inspection nothing more than an unsuccessful attempt to patch the break had been done.

BORDENTOWN.—The Bordentown plant, consisting of screens, septic tanks, primary and secondary contact beds, settling basin with aerating weir and sand beds, has been described in the State Board of Health Report for 1910, p. 363.

Inspections were made after the plant was completed on June 27th and July 20th, 1911, but the plant was not put into operation until later. House connections have been made slowly, there being but 38 at inspection on September 14th, and 72 on October 18th. On October 18th, a break in the pipe from one septic tank to the contact filters had been caused by a cave-in, and sewage was being by-passed directly into the creek. A reinspection on October 24th, however, showed that this pipe had been repaired, and that the plant was in good condition.

BRADLEY BEACH.—The septic tank at Bradley Beach consists of two vaulted chambers, each about 75 feet by 15 feet, located on the beach about two blocks north of the La Reine Hotel.

Inspection on December 23d, 1910, showed the tanks in need of cleaning; on reinspection March 15th, 1911, they were found clean. Inspection on July 1st, 1911, showed the effluent to contain considerable fine suspended matter, but no large solids.

Plans have been approved and contracts let for a new tank to serve the southern portion of the borough.

BRIDGETON.—The Bridgeton sewage disposal plant consists of two hypochlorite disinfection plants, one on each side of the Cohansey creek.

At the Glass street plant, sanitary sewage flows by gravity to an ejector well, from which it is raised by two Blaisdell ejectors to the sedimentation beds.

The sedimentation basins, two in number, are each 100 feet by 12 feet and 7 feet deep to the flow line. The floors are pitched to sludge gates, by means of which the basins can be drained to the suction well of a triplex plunger pump, driven by a gasoline engine.

From the sedimentation basins, sewage flows over mixing weirs, at which the hypochlorite is added to the disinfection tanks. These are two in number, each 50 feet by 6 feet and 7 feet deep to the water line, and the floors pitch to sludge gates draining to the well of the triplex pump.

There are two hypochlorite mixing tanks, each 4 feet by 3 feet, by 3 feet 6 inches.

The mixing tanks, the two air compressors for operating the ejectors, the triplex pump and the gasoline pump are neatly housed in a pressed brick building.

The Water street plant is quite similar to the other, though smaller and there are no gates. Sewage flows directly to two sedimentation basins, each 70 feet by 9 feet and 7 feet deep to the flow line. These have sludge drains to the suction well of a triplex pump, driven by a gasoline engine, and overflow to the single sterilizing well, 18 feet 8 inches by 7 feet and 7 feet deep to the water line. There are two mixing tanks, each 3 feet by 3 feet by 4 feet, and these, together with the pump and gasoline engine, are in a neat pressed brick building.

Inspections were made on July 13th, September 13th and October 9th, 1911, and at the last inspection both plants were practically complete, but had not yet been put in operation.

BROWN'S MILLS-IN-THE-PINES.—The old septic tank at Brown's Mills has been condemned and discarded, and an inspection on January 6th, 1911, showed that the sewage was flowing through an opening in the sewer line out upon the ground, where it sank into the ground. On September 26th, 1911, it was found that the sewer had been intercepted and extended about 2,200 feet to the site of the new disposal plant, plans for which have been approved but construction has not yet been commenced. It is expected, however, that the plant will be completed before the opening of the winter season.

BURLINGTON.—The plant serving the city of Burlington consists of a septic tank and land beds, and has been described in the State Board of Health Report for 1909, p. 230.

Inspections were made on December 7th, 1910, January 16th, April 10th, July 20th, August 29th, September 21st and October 26th, 1911. In every case the plant was in extremely unsatisfactory condition. The stone strainers were thoroughly clogged, the filters were densely overgrown with grass and weeds, and unpurified sewage was reported flowing to the effluent ditch through breaks in the embankment. Although improvement has been repeatedly urged, none was shown at the latest inspection.

BURLINGTON.—Thomas Devlin Manufacturing Company. The disposal plant treating the sewage and waste water from the works of the Thomas Devlin Manufacturing Company consisting of a septic tank, sprinkling filters, a settling basin and sand filters, has been described in the State Board of Health Report for 1909, p. 231. Inspections made on January 6th, April 21st, July 20th, September 21st and October 26th, 1911, showed the plant to be in fairly good condition, except that the sludge tank for receiving the septic tank sludge is improperly used. This is a tight, concrete tank with no provision for draining, and the scum on the surface is floated out upon the meadow in times of heavy rain.

On August 29th, the plant was found by inspection to be out of commission for several days, because of a break-down of the pumps. During this period, the sewage was run out on the ground near the plant.

CALDWELL.—Essex County Penitentiary. The ground absorption plant for disposing of the sewage of the Essex County Penitentiary, at Caldwell, has

been described in the State Board of Health Report for 1909, p. 231. An inspection was made on September 18th, 1911, and the plant was found in excellent condition. The absorption lines are regularly changed and rested, and no sewage appears at the surface anywhere.

CARLSTADT.—The septic tank at Carlstadt has been described in the State Board of Health Report for 1910, p. 363. An inspection was made March 7th, 1911, and the tank found in satisfactory condition.

CHANGEWATER.—Hopatcong Woolen Mills. The septic tank and sand bed of the Hopatcong Woolen Mills, at Changewater, have been described in the State Board of Health Report for 1910, p. 364.

An inspection was made on September 30th, 1911, and the plant found in excellent condition.

CHATHAM-MADISON.—The sewage disposal plant for the boroughs of Chatham and Madison, comprising high and low level settling tanks of the Imhoff type, primary and secondary contact beds, will probably be put in operation during the winter. Inspections of the construction work were made on May 1st, July 14th, July 26th and October 3d, 1911.

A complete description will be given when the plant is completed.

CLINTON.—Lehigh Valley Creamery. At Clinton, the Lehigh Valley Railroad has a small two-chambered settling tank in which the wastes from their creamery are treated with lime and settled. An inspection on April 7th, 1911, showed that the use of lime had been discontinued; it has, however, been resumed as was learned by reinspection on June 16th. The tank does not, however, remove the solids effectively, and what little is stored is washed into the drainage ditch whenever the tanks are cleaned.

COLLINGSWOOD.—The sewage disposal plant of the Collingswood Sewerage Company, comprising pumping station, septic tanks and four contact beds, is located at West Collingswood near Newton avenue. Sewage flows first to an old septic tank 22 feet deep, lying between two concentric circular walls, 40 feet 6 inches and 21 feet 2 inches in diameter. The depth to the invert of the inlet sewer is 5 feet.

The inner wall, connecting with the septic tank by openings through the inner wall, is the suction well of the centrifugal pumps which raise the sewage to the new septic tanks. These tanks, two in number, are 125 feet long and 7 feet deep, but of unequal width, 6 feet and 25 feet respectively. Sewage flows through both in succession.

From the tanks, the sewage flows to one of four contact beds, each 60 feet by 40 feet, filled to a depth of 2 feet 10 inches with 1-inch stone, and with a 2-inch layer of fine stone on top.

The effluent from the plant flows into Newton creek.

Inspections were made on November 25th, 1910, and on January 11th, February 24th, April 22d, June 22d, July 19th, August 28th, September 11th, September 12th and September 27th, 1911. The tanks were cleaned in September, the sludge being pumped into a trough and run into a low place which has been cut off from the creek by an embankment. When sufficiently drained, this is to be covered with earth.

The plant is heavily overloaded, the filters being dosed at times as often as every two hours, and the flow through the tanks being sufficiently rapid to carry considerable solid matter to the beds. Two additional contact beds were provided for on the approved plans, but these have never been built.

The pumping capacity is not sufficient to handle the storm flow, and at such times an emergency overflow passes part of the sewage directly to the

stream. It is expected that additional pumping capacity will be provided at once.

The attendant has agreed to make daily putrescibility tests, but had not commenced them when last visited.

COLTS NECK.—Colts Neck Creamery Company. At Colts Neck, the Colts Neck Creamery Company has installed a tank 3 feet by 6 feet and 3 feet deep, in which their wastes are settled and treated with lime. An inspection was made on October 4th, 1911, and the plant was found clean and in good condition.

CRESSKILL.—The septic tank serving a group of about 25 houses on the hillside at Cresskill, is about 10 feet by 18 feet, 4 feet deep at one end and 2 feet deep at the other, and divided into two equal chambers. An inspection was made on September 20th, 1911, and while there was no odor and lime was freely spread about the house, the chamber into which sewage was flowing was nearly filled with solids and needed cleaning.

DEAL BEACH.—The Deal Beach septic tanks have been described in the State Board of Health Report for 1900, p. 232. Inspections were made on December 27th, 1910, and on July 6th, 1911. It was reported that the tank was clean, but that there was a leak in the outfall pipe on the beach.

The outfall pipe reaches only about 150 feet beyond the surf.

DEAL BEACH.—Deal Golf Club. The disposal plant of the Deal Golf Club, at Deal Beach, comprises a settling tank, a dosing chamber and two sand filters.

The settling chamber is 5 feet by 4 feet and 5 feet deep to the flow line, with a baffle wall across the middle. The dosing chamber is 8 feet by 4 feet and 23 inches deep to the flow line. It is discharged to the sand beds intermittently by a 5-inch Miller Automatic Siphon. Both tanks are of concrete and under ground.

The sand beds are each 30 feet by 10 feet, and filled to a depth of 2 feet 6 inches with sand, laid on gravel. The effluent flows to a ditch draining into Deal lake.

An inspection of the construction was made on March 24th, 1911, and the operating plant inspected on September 1st, 1911. It was then found that the surface of both beds needed cleaning, that the siphon was out of order and that sewage was running continuously to one bed, which was filled and overflowing.

It was subsequently reported that the siphon had been fixed under the direction of the Pacific Flush Tank Company, and was working perfectly.

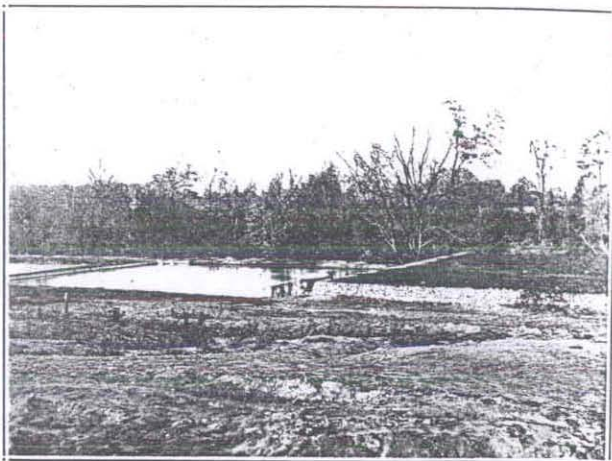
EAST RUTHERFORD.—The septic tank at East Rutherford, serving parts of the boroughs of East Rutherford and Carlstadt, has been described in the State Board of Health Report for 1910, p. 364.

Inspections were made on March 7th and on September 19th, 1911, and the tank was reported in good condition.

ENGLEWOOD.—Three settling tanks are being built to dispose of the sewage of Englewood. An inspection on September 28th, 1911, showed the excavation nearly completed, but no actual construction started. A full description of this plant will be given on its completion.

ESSEX FELLS.—The sewage disposal plant at Essex Fells, comprising a septic tank, two contact beds and seven sand filters, has been described in the State Board of Health Reports for 1909 and 1910, pp. 233 and 364 respectively.

Inspections were made on January 19th, April 24th, August 1st and on September 18th, 1911. It was found that the two contact beds were connected and that sewage was flowing continuously to both, the automatic dosing siphon having been out of commission for a long time. The beds could not be



HADDONFIELD: Part of Sprinkling Filter and Settling Basin.



HADDONFIELD: Sprinkling Filter in Action.

properly operated, however, even if the siphon worked, as the beds would have to be dosed every one and one-half to two hours to handle the flow. No contact period could be had without increasing the area of the contact beds.

The sand beds are dosed intermittently, one bed being used each day and dosed about every four hours. The final effluent appears quite satisfactory, and all samples have been non-putrescible.

The attendant has agreed to make daily putrescibility tests of the effluent.

FLEMINGTON.—The sewage disposal plant at Flemington, including a settling tank, screens and land filters, has been described in the State Board of Health Report for 1909, p. 233.

Inspections were made on December 28th, 1910, and on February 15th, June 21st, June 24th, July 28th and September 28th, 1911, and the plant was found in good condition. The beds are changed daily, and while the distribution is poor, the effluent appears satisfactory. While not entirely clear and producing some cloudiness in the stream below, it has been non-putrescible when sampled, and there are no objectionable growths in the stream.

The effluent drains into a branch of the Raritan river, which is used as a source of water-supply below.

FREEHOLD.—The dosing tank and seven land beds at Freehold have been described in the State Board of Health Report for 1909, p. 234. Three or four beds are commonly in use each year, the remainder being planted in corn and oats.

The beds have usually received attention and been kept in good shape, but trouble has been experienced with sewage passing directly through to the underdrains without purification by means of breaks in the beds, possibly due to burrowing animals.

An inspection on December 29th, 1910, showed the beds to be turning out a fairly well purified, non-putrescible effluent, but inspections on February 16th, July 7th and September 16th, 1911, showed unsatisfactory purification.

GLEN GARDNER.—New Jersey Sanatorium for Tuberculous Diseases. The septic tank, trickling filters, settling basin and cinder beds treating the sewage of the New Jersey Sanatorium for Tuberculous Diseases, at Glen Gardner, have been described in the State Board of Health Report for 1909, p. 234.

This plant is one of the worst in the State in condition. Inspections were made on April 7th, June 16th, July 29th and September 30th, 1911, and in every case it was reported that the septic tank was nearly filled with solids, most of the trickling filter nozzles clogged, the trickling filters clogged and one of them overflowing to the surface of the ground, and the cinder beds overflowing down the side of the hill. A broken pipe leading to the trickling filters also contributes some septic sewage to the hillside. These matters have been repeatedly called to the attention of the authorities, not only during the past year but before, yet no steps appear to have been taken to remedy the condition.

The effluent from this plant is commonly absorbed in the ground during its passage down the slope, but complaints have been made that, at times (probably when the ground is saturated by rain), the sewage flows in a continuous stream to a tributary of the south branch of the Raritan river, from which unfiltered water is used as part of the public water-supply of Flemington.

HADDONFIELD.—The old portion of the Haddonfield sewage disposal plant consisting of a septic tank and sand filters, has been described in the State Board of Health Report for 1909, p. 235. Recently, two of the five sand beds have been replaced by a sprinkling filter and a settling basin.

The trickling filter is 98 feet 6 inches by 106 feet, and composed of 3.4 feet of broken stone. It is dosed automatically by a siphon tank designed to vary the head so as to give a uniform rate per unit of area. The sewage is applied to the filter by 72 pressure nozzles, 36 of the Taylor Hexagon type and 36 of the Reading type. The latter appear to give a greater throw for the same head. The effluent is carried by tile underdrains to a concrete settling basin about 80 feet square and 3 feet deep, with outlets both to the creek, and to the three old filter beds.

The sprinkling filter was put in operation on Saturday, September 9th, 1911.

Inspections previous to and during the construction of the trickling filter were made on December 17th, 1910, and on March 15th, June 22d and July 19th, 1911, and at these times the septic tank effluent was being run directly into the creek.

After the plant was put in operation, inspections were made on September 12th and October 9th, 1911. On the former occasion it was found that a small part of the tank effluent was being by-passed to the creek by an overflow in the septic tank, and by the nozzles along the edges of the trickling filter spraying out upon the ground. At the later inspection, these nozzles had been replaced with proper half-nozzles, but the overflow had not been closed as requested.

The trickling filter effluent was clear and bright, but not non-putrescible, possibly because the filter has not had time to become properly seeded.

The attendant at this plant agreed to make daily putrescibility tests, but at the last inspection had not yet commenced them.

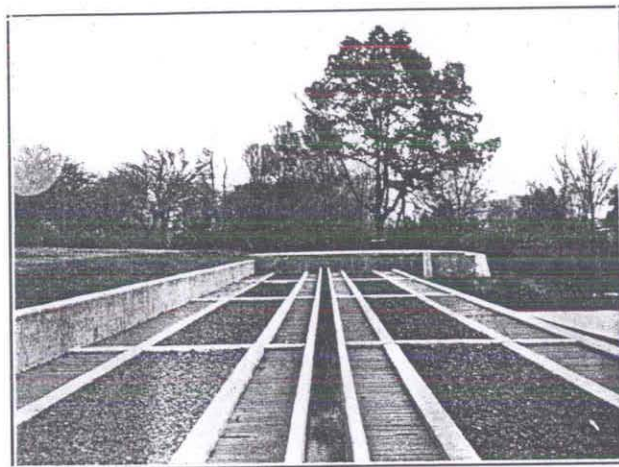
HADDON HEIGHTS.—The new sewage disposal plant at Haddon Heights, comprising septic tanks, coke strainers, a dosing tank and sand beds, was completed early in August, 1911.

Sewage flows into a fan-shaped septic tank, 39 feet long, 25 feet and 30 feet wide at the ends, respectively, and 8 feet on the average to the flow line. This tank is divided by a 12-inch wall into two unequal chambers, capacity, 23,400 and 46,800 gallons respectively, both overflowing into a concrete trough leading to the coke beds.

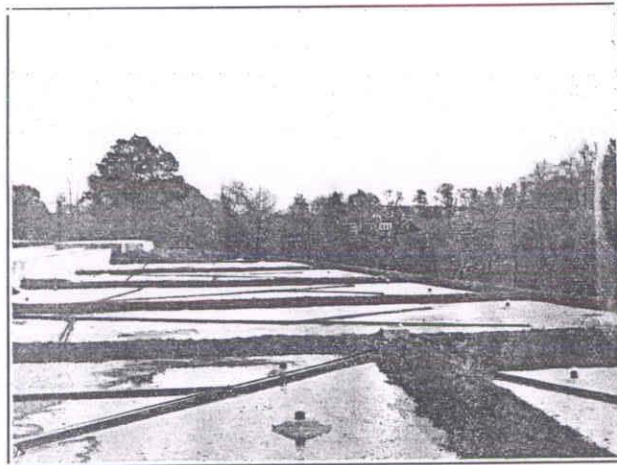
These coke beds, eight in number, are each 38 feet by 9 feet and 4 feet 6 inches deep. Each is separated by open brick walls from side chambers of the same length and depth, and 24 and 36 inches wide respectively. When filled, they overflow into a trough leading to the dosing tank. Provision is made for draining the coke beds to a single sand bed, which can also receive the sludge from the septic tank.

The concrete dosing tank holds about 12,000 gallons, and is discharged through alternating automatic siphons to one of the sand beds in use at the time of discharge. Beside the sludge bed already mentioned, there are six sand beds, each 2 feet 6 inches deep, and covering a total area of about one and one-eighth acres. All the beds are thoroughly underdrained, with ventilating pipes at the head of each drain line, and, with one exception, each is provided with a manhole for ventilating and cleaning the underdrains. All the valves used in the plant are plug valves, seating on horizontal rings, and held in place only by their own weight. The effluent flows into a small stream, called King's run.

An inspection of the plant was made on August 22d, 1911, very shortly after it was put in operation. Already, at that time, complaints had been made of the unusually disagreeable odor from the plant. Later visits on September 11th and 12th, found the odor still worse, and it was recommended



HADDON HEIGHTS: Septic Tank and Primary Coke Beds.



HADDON HEIGHTS: Secondary Sand Beds.

that the coke beds be cut out, as the trouble was obviously due to excessive storage of the sewage, and as these coke beds were accomplishing nothing save an undesirable increase in storage. It was noted, also, that although sewage was flowing only into the smaller septic tank, it was flowing out of both.

Finally, in response to a formal complaint lodged against the plant by an owner of adjoining property, a thorough investigation was made from October 3d to 6th.

It was found that only 72 house connections had been made, and that the flow was averaging about 18,000 gallons per twenty-four hours. A connecting pipe between the chambers of the septic tank, placed under the floor and not shown on the plans, was found open, making both chambers effective, and giving a calculated tank storage of about four days.

The coke beds were being used one at a time for about a week at a time, and as they were thus kept anaerobic, they allowed additional septic action for about twelve hours. Finally, the dosing tank was emptied only about every 16 hours, on the average.

The plant was an unusually good demonstration of the effects of over-septicization, and it is not surprising that the sewage smelled putrid as it flowed through the open tank effluent channel and out upon the beds.

The connecting pipe between the septic tank chambers was closed, and the small tank only put in use; the storage being thus reduced to 25-30 hours, and the coke strainers were cut out.

While the storage period is still excessive, and while there may be further complaint before the flow becomes sufficiently large to reduce it materially, an inspection on October 16th, showed no odor noticeable except inside the tank effluent channel, and the former complainant stated that "although he had sniffed his hardest, he had been unable to smell the plant at all recently."

The attendant makes daily putrescibility tests of the effluent.

HILLIARD'S ISLAND.—A. H. Riggs. The private disposal plant of Mr. A. H. Riggs, at Hilliard's Island, photograph of which was shown in the State Board of Health Report for 1909, consists of a septic tank, dosing tank and sand filter. All masonry is of concrete, and the total cost did not exceed one hundred dollars.

The septic tank is 6 feet 8 inches by 3 feet 8 inches and 7 feet deep to the flow line. The dosing tank is 4 feet by 3 feet 8 inches and 3 feet deep to the flow line. The sand filter is 4 feet 3 inches by 3 feet 8 inches and is filled to a depth of 4 feet with sand, laid on a base of coarse gravel and stone. It is intermittently dosed by a Miller Automatic Siphon.

The plant is very compact, and has done very satisfactory work. It was inspected on March 20th, 1911.

INTERLAKEN.—The septic tank and pumping station at Interlaken have been described in the State Board of Health Report for 1909, p. 235.

It was visited on December 27th, 1910, and on September 1st, 1911, and both times the electric pumps were out of commission; on the latter date, the well was filled by the heavy rains and overflowing through the manholes over the roadway to Deal lake.

On inspection made March 18th and on September 6th, 1911, one pump was found running and on the latter date, the work of repairing the other was in progress.

ISLAND HEIGHTS.—The screen and the sand beds, which treat the sewage of Island Heights, have been described in the State Board of Health Report for 1910, p. 364.

Inspections of this plant were made on July 1st, July 5th and on September 27th, 1911, and it was reported as suffering from a uniform lack of attention. The basket screen is not cleaned out as regularly or as often as it should be; the beds are not changed often enough, and are not level; the underdrainage appears inadequate, and much of the sewage must seep through the banks to the stream. An automatic dosing apparatus would be a great improvement.

JAMESBURG.—State Home for Boys. The flush tanks and land filters for treating the sewage of the State Home for Boys, at Jamesburg, have been described in the State Board of Health Report for 1909, p. 236.

Inspections were made on January 4th, March 9th and 14th, August 4th and September 23d, 1911. It was found that somewhat more attention has been paid to the plant than formerly, the beds having been ploughed up and harrowed occasionally during the past year. It is essential that this be continued, as the ground is unsuitable for sewage filtration.

The sludge removed from the flush tanks was piled around the tanks, and some of the beds have, at times, been so badly clogged that sewage stood on them for several days.

The effluent analyses during the year have all shown unsatisfactory purification and putrescibility.

KEYPORT.—A plant for the disinfection of the sewage of Keyport with hypochlorite of lime is under construction and may be completed during December, 1911. The construction work was inspected on July 1st and 22d and on October 12th, 1911. A full description of the plant will be given on its completion.

LAKEHURST.—The old sewage disposal plant at Lakehurst serving the Pine Tree Inn and cottages and a few other houses, was described in the State Board of Health Report for 1909, p. 237. Since then, plans for two new beds each about 75 feet square have been approved, and one has been built. An inspection was made on September 27th, 1911, and the second bed found about half built. As the hotel and cottages were not open, there was little or no flow to the bed at that time.

LAKEWOOD.—The sewage disposal plant at Lakewood was originally planned and partly built in duplicate, two sets of settling tanks, screen chambers and sand beds being provided, one set about 5 feet lower than the other. The low level plant was never quite completed and has been entirely discarded, the underdrains having been removed from the sand beds.

In the high level plant, which is now in use, sewage enters first a small tank intended for a bar screen chamber; but the screen has never been installed. This empties into a "settling chamber," 10 feet by 10 feet and 5 feet deep, but receives practically no sedimentation before flowing to the screen tank. The tank, also, is 10 feet by 10 feet and 5 feet deep, and contains a horizontal screen of salt hay between wire frames. Sewage flows upward through the hay, and then to the sand beds, four in number, each about 100 feet square. Two additional beds of the same size have been partly constructed and could be prepared for use in a few days. The effluent flows into Metedeconk river.

Inspections of this plant were made on March 14th and 16th, July 7th and on September 23d, 1911, and the operation of the plant was found unsatisfactory. The screens had not been cleaned regularly, and the sand beds, which are operated by hand, had been alternated only when the attendant considered it necessary—the interval being sometimes as long as two weeks. As a result, the bed in use has generally been kept continually flooded, and there must be some overflow to the river through the underdrain ventilators, which extend but a few inches above the sand.

Such analyses as have been made indicate putrescibility and unsatisfactory purification.

The superintendent has been notified to have the beds changed at least once daily and, if this is done, the results should be better. An automatic device for intermittent dosing of the beds would be a great improvement.

The attendant agreed to make daily putrescibility tests of the effluent.

On account of complaints against the plant by adjacent residents, the owners of the plant (the Lakewood Water, Light and Power Company) are contemplating abandoning it and building a new plant about a mile down the river.

LAWRENCEVILLE.—Lawrenceville Preparatory School. The septic tanks and land irrigation area of the Lawrenceville Preparatory School, at Lawrenceville, have been described in the State Board of Health Report for 1909, p. 237.

Inspections were made on March 31st and September 29th, 1911, and the septic tanks were found to be in excellent condition. The irrigation field, however, receives little attention, and the distribution is extremely poor; but on account of the removal of solids in the tank, and the large land area available, the sewage appears to be handled satisfactorily.

LOCH ARBOUR.—The Loch Arbour septic tank is a circular brick well 20 feet in diameter and 9 feet deep to the flow line, located under the beach near the United States Life Saving Station, at the foot of Deal lake. About 40 houses are connected with the tank, only four of which supply sewage in the winter.

The effluent is carried out to sea in an iron pipe 1,000 feet long.

The tank was inspected on December 27th, 1910, and on July 6th, 1911, and was reported to be in satisfactory condition.

LONG BRANCH.—The only treatment of the sewage of Long Branch is screening through several sets of screens, the finest of which has three-quarter-inch mesh. The screens are cleaned regularly, and the screenings carted away and buried. Great care is taken to keep the screen-house clean and free from odor; large quantities of pinolyptol and other commercial disinfectants being used.

From the screen chamber, the sewage flows to a tidal tank 400 feet long, 7 feet wide and 6 feet deep, under Broadway near the beach. This tank discharges directly into the ocean about 800 feet out and the tide, of course, backs into the tank at flood.

On October 13th, 1908, Long Branch was notified to cease polluting the Atlantic ocean prior to May 1st, 1909, but no change has been made in the system of disposal.

Inspections were made on October 4th and October 11th, 1911, and no effect of the sewage discharge was visible.

MADISON.—Residence of the late Dr. Leslie D. Ward. The sewage and sink wastes from the residence of the late Dr. Leslie D. Ward, at Madison, and the carriage-wash from his stable, are treated at a private plant, consisting of a septic tank, a siphon chamber and two sand beds.

The septic tank is 16 feet by 5 feet and 2 feet deep to the discharge level of the siphon. At the outlet of the tank are placed a bar screen of one-half-inch square bars, spaced at five-eighths-inch, and a wire screen of three-quarter-inch mesh.

The siphon tank is circular, about 4 feet in diameter, 1 foot 6 inches deep to the flow line, and drawn in at the top to a manhole cover.

Each of the two sand filters is 30 feet by 33 feet, and filled to a depth of 3 feet 6 inches with screened sand. The underdrains discharge into a ditch flowing to the Passaic river.

MAHWAH.—American Brake Shoe Company. The flush tank and sand beds treating the sewage of the American Brake Shoe Company factory, at Mahwah, have been described in the State Board of Health Report for 1910, p. 365. It was inspected on September 29th, 1911, and found to be turning out a clear, bright, non-putrescible effluent.

MANASQUAN.—The septic tank at Manasquan has been described in the State Board of Health Report for 1910, p. 367. An inspection was made on March 20th, 1911, and the tank found badly in need of cleaning. A reinspection on July 3d, 1911, showed that it had been thoroughly cleaned and was in excellent condition.

MARGATE CITY.—At Margate City, two hypochlorite disinfecting plants have been built, situated at the ends of Adams and Nassau avenues. The plants, as built, differ considerably in dimensions and arrangements from the plans approved by the Board.

These plants were visited on July 11th, September 9th and September 19th, 1911, but at the last inspection no water connections had been made; no chemicals were on hand, and neither plant had been put in operation. The floor of the Nassau avenue plant is not properly drained, and on both the visits in September, was found a foot or more under water.

The sewage of Margate City was entering the Thoroughfare without treatment at the last report.

MEDFORD.—The sewage disposal plant at Medford consists of septic tanks and sand beds. When it was built, three old cesspools were utilized as septic tanks. The first of these is circular in shape, 7 feet in diameter and 7 feet deep; from this, the sewage flows into the second tank, which is oval in shape, 14 feet long and about 10 feet wide and 7 feet deep; the sewage then flows into a third tank, circular in form, 8 feet in diameter and 7 feet deep. The first tank has a bottom constructed of concrete, but the other two have simply sand bottoms.

From the tanks, the sewage passes to two sand filters each 20 feet by 30 feet.

This plant was inspected on August 4th and September 5th, 1911. Sewage was found running continuously to one bed, and the beds are not changed as often as they should be. An automatic siphon for dosing the beds intermittently would be a material improvement.

MERCHANTVILLE.—The Merchantville plant, consisting of septic tanks, flush tank, coke strainers and sand beds, has been described in the State Board of Health Report for 1909, p. 237.

Inspections were made on December 8th, 1910, and on January 5th, February 21st, March 16th, April 25th, June 22d, July 14th, September 5th and October 16th, 1911; the same conditions being found in every case. The small septic tank, which is not in use, had about 6 feet of scum on it and had not been cleaned at the last report, though it has been repeatedly urged. The large tank which is now in use, had 2 feet of scum on September 5th, and will probably soon be in the same condition as the small one.

The automatic siphons for discharging the flush tank to the coke beds have been found running continuously at practically every visit, as the flow far exceeds their capacity. The town has agreed to install larger siphons, but at last report nothing had been done about it.

The coke strainers were found clogged to a considerable extent, and the sand filters have been reported clogged and needing cleaning. A rough estimate of the flow, February 24th, 1911, indicated a net rate at that time of about 800,000 gallons per acre per day.

In spite of these conditions, the effluent from the plant has been clear and, occasionally, non-putrescible. The purification accomplished appears to vary widely at different times.

MILLVILLE.—The disposal plant of the city of Millville consists of four sedimentation tanks, an aerating well and tank, four contact beds controlled by the Aerlock system, and an effluent detention basin.

The sedimentation tanks used in series, are each 76 feet 6 inches by 15 feet and 6 feet deep to the flow line. The effluent discharges into a funnel set in the inner pipe of the aeration well—an 8-inch pipe about 136 feet long. The outer casing of the aerating well is a 12-inch pipe. The septic sewage is supposed to go down the inner pipe and come up through the annular space into the aeration tank 30 feet 6 inches by 19 feet 6 inches and 3 feet deep to the flow line.

The Aerlock siphons discharge upon the contact beds, each 100 feet by 50 feet, and filled with 3 feet of broken stone. The effluent from these beds passes again through the control house, dissolving copper sulphate from cans dipping into the effluent pipes, and flows to the detention tank.

This tank is about 200 feet by 65 feet, with a minimum total depth of 6 feet. At low tide, the disinfected contact effluent flows directly into the Maurice river, but when the tide rises flap valves close off the outlet and the effluent is stored until these valves are reopened on the falling tide.

The sludge from the sedimentation basins is supposed to be run to a coarse sand filter in a tight concrete basin 49 feet 6 inches by 28 feet 6 inches. The underdrainage of this bed runs to a sump, from which it is supposed to be pumped back into the tanks, while the sludge was to be left to dry until ready to cart away. This bed, however, has never been used.

Inspections of this plant were made on November 26th, 1910, and on January 18th, February 9th, May 4th, July 12th, September 14th and October 10th, 1911. The first two sedimentation basins were found every time in need of cleaning, the first one being filled with solids to about 6 inches above the walls. Sludge from the last cleaning had been thrown out on the ground and surrounded the tanks. The aeration well was probably stopped up, for most, if not all, of the sewage was merely splashing over the sides of the funnel.

The Aerlock siphons were repeatedly found out of commission with sewage flowing continuously on one or more beds. The beds were badly clogged, and, at times, would remain flooded over practically the whole surface.

The copper sulphate cans were at times empty though at the last inspection they were found filled.

As a result of these conditions, an investigation of the plant was made October 16th-18th. Conditions were found as before, and gaugings of the flow and careful observations of the behavior of the plant made.

Weir measurements indicated an average flow during the afternoon of October 17th, at the rate of over 1,000,000 gallons per day. On this basis, the calculated storage in the sedimentation basins was 5.4 hours, and the actual storage, because of reduction of volume by solids, probably not much over half this. The calculated rate on the contact filters (each of which was dosed every 2.5 hours) was over 2,000,000 gallons per acre, per day, and the calculated per cent. of voids about 27.

The ineffectiveness of the Aerlock siphons was found to be due to the backing up of the detention tank above the air bells, and to the consequent repeated dosing of a bed without giving its cut-off bell opportunity to get air. In small part this is due to leakage of tide-water into the tank, as the flap valves closed very slowly; but chiefly, the trouble was due to the combination of excessive flow and the inadequate area of the storage tank. This could be remedied either by preventing the tank level from ever rising above the air bells; through enlarging the tank or pumping all excess; or by increasing the interval between doses so that the tide would always fall lower than the bells between doses. This could be done by cutting down the flow, washing the zone to increase the voids, and building additional contact beds.

The effluent from this plant has been partially, but not completely, disinfected and it has generally been putrescible.

MONTAGUE.—Rock Spring Creamery Company. The creamery wastes from the Rock Spring Creamery Company, at Montague, are run into a tank of about 800 gallons capacity, where they are supposed to be treated with lime in the manner outlined in the State Board of Health Report for 1909. An inspection on September 26th, 1911, however, revealed the fact that these directions were not being properly followed, and that the tank was not being cleaned often enough, so that it had been filling up and overflowing to the river, causing a local nuisance. Instructions were given which, if followed, should give satisfactory results.

MOORESTOWN.—The sewage disposal plant at Moorestown, consisting of septic tanks and contact filters, has been described in the State Board of Health Report for 1909, p. 238.

An investigation of this plant was made on March 7th, 1911. It was found that the rate of flow at this time was about 500,000 gallons per day. On this basis, the total calculated storage in the tanks was about one and one-fifth hours, but as the grit chamber and first settling basin were practically filled with solids, the storage was much less than this. In fact, uranine placed at the entrance to the plant appeared in the effluent of the filters in just one hour.

The net rate on the filters (including periods of rest) was at this time 1,250,000 gallons per acre per day, and the actual rate during dosing, about 6,250,000 gallons per acre per day.

The automatic siphons for dosing the contact beds intermittently are unable to handle the excessive flow during the day, and never break except at time of light flow during the night. The beds are changed once or twice a day, all the flow running continuously to one bed (except at night when the siphon breaks).

Inspections made on March 13th, June 30th and September 5th, 1911, showed conditions the same—tanks overloaded with solids, sewage flowing continuously to one bed, and passing through the plant very rapidly.

In spite of these conditions, it is the remarkable fact that analyses made on December 21st, 1910, and on January 25th, 1911, showed considerable oxidation, and a series of hourly samples taken on March 7th, 1911, were non-putrescible up to the sample taken at 4:30 p. m.

The plant is, of course, tremendously overloaded and must eventually be extended. Until this is done, it would be a great help to have an automatic apparatus installed for filling and discharging the beds alternately, and this is now being contemplated.

MORRIS PLAINS.—The New Jersey State Hospital. The two sewage disposal plants of the New Jersey State Hospital, at Morris Plains, for the insane, consisting of a land irrigation system, and a sand filter plant, have been described in the State Board of Health Report for 1909, p. 239.

Inspections were made on July 27th and September 21st, 1911, and both plants were found in excellent condition. The tanks are cleaned regularly and the sludge composted with lime so as to prevent all smell. The irrigation field absorbs its dose readily, no sewage appearing at the surface more than 50 or 60 feet from the distribution ditches, and the sand filters turn into the pond below an effluent that is non-putrescible and unusually clear and bright.

MORRISTOWN.—The septic tank, contact beds and sand filters at Morristown, have been described in the State Board of Health Report for 1910, p. 366. Inspections were made on February 20th, May 1st, July 12th, July 27th and September 21st, 1911, and the plant found in excellent condition. The attendant makes daily putrescibility tests, and the effluent appears to have been regularly non-putrescible.

NESHANIC.—Lehigh Valley Railroad Creamery. Two tanks, each 5 feet by 12 feet and 3 feet deep, have been installed at the Lehigh Valley Railroad Creamery, at Neshanic, for the settling and treatment with lime of the creamery wastes.

This plant was inspected on July 28th, 1911, and found in good condition and free from objectionable odors.

NEW LISBON.—Burlington County Hospital for the Insane. The old sewage disposal plant at the Burlington County Hospital for the Insane, at New Lisbon, was condemned and ordered rebuilt, notice being served on September 28th, 1908. An inspection on February 21st, 1911, showed that nothing had been done towards reconstructing the plant, and on September 27th, 1911, it was found that the slag had been removed from the old filter, and that the entire sewage flow was being by-passed without any treatment whatever into a ditch draining to Rancoocas creek, which is used just below as a source of water-supply by Mount Holly.

NEW LISBON.—Burlington County Almshouse and Hospital. The tile absorption disposal plant at the Burlington County Almshouse and Hospital, at New Lisbon, is described in the State Board of Health Report for 1909, p. 240.

It was inspected on February 21st and on September 27th, 1911, and found to be in excellent condition. No sewage appears at the surface of the ground.

NEW MILFORD.—The septic tank at New Milford, which serves part of the borough of Delford, has been described in the State Board of Health Report for 1909, p. 232.

An inspection was made on September 20th, 1911, and the tank found in good condition with but little scum and sludge.

NEWTON.—The two sewage disposal plants at Newton, known as the Clinton street plant and the Sparta street plant, consisting in each case of a septic tank and sand beds, have been described in the State Board of Health Report for 1909, p. 240.

These plants were inspected February 3d, July 27th and September 22d, 1911, and appear to have careful attention, and to be in good shape. Trouble has been experienced at the Clinton street plant, however, because of clogging and growths, conditions which are due to the incomplete drainage of the beds on account of the backing up of water in the ditch into which the underdrain discharge.

OCEAN CITY.—A hypochlorite plant for disinfecting the sewage of Ocean City has just been installed.

Sewage flows first through a bar screen, made of one-half-inch bars spaced at one inch, and inclined at about 35 degrees with the horizontal. It then enters one of two tanks of the "biolytic" type, developed by Winslow and Phelps, at Boston. Each of these tanks is 16 feet 10 inches by 50 feet; the flow section being V-shaped, 7 feet 6 inches deep and 1 foot 10 inches wide at the bottom. The sewage enters the tank by flowing into a rectangular channel 12 inches wide and 9 feet deep, formed by two vertical 5-inch walls running the full length of the tank and, passing through openings in the base of the walls, flows upward with diminishing velocity, finally passing over long, knife-edge, overflow weirs to 12-inch effluent pipes in the side walls.

These pipes discharge into a rectangular channel 2 feet wide and 7.4 feet deep. At this point the hypochlorite solution is added and the sewage overflows a 7-inch wall into the disinfecting tank. This tank is 32 feet 7 inches by 30 feet, with a depth of about 7.2 feet. An overflow baffle-wall, V-shaped in plan, is placed near the inlet end and the disinfected sewage finally overflows an outlet weir to the discharge pipe.

The methods of operation contemplate an addition of about six parts available chlorine per million gallons of sewage.

This plant was inspected on September 14th, 1911, and found to be nearly completed.

OCEAN GROVE.—The Ocean Grove septic tank was described in the State Board of Health Report for 1909, p. 241.

The tank was inspected on December 27th, 1910, and found to be badly in need of cleaning. A reinspection on March 15th, 1911, showed that this had been done, and on June 29th, 1911, the tank was found in excellent condition.

OVERBROOK.—Essex County Hospital for the Insane. The septic tanks, contact beds and sand beds of the Essex County Hospital for the Insane have been described in the State Board of Health Report for 1909, p. 242.

Inspections of this plant were made on December 27th, 1910, and on February 6th, August 1st and September 21st, 1911, and found in uniformly good condition and turning out a clear, bright, non-putrescible effluent.

The old septic tank, built about 1895, and never yet cleaned out, has no scum on it, and only a few inches of sludge in the bottom. For about three years it has received only a small flow, chiefly of laundry wastes, but up to that time it handled all the sewage of the institution.

The attendant agreed to make daily putrescibility tests of the effluent.

PEMBERTON.—The settling basin and land disposal area at Pemberton have been described in the State Board of Health Report for 1909, p. 243. During the past year, a pumping station for raising the sewage of a few houses in North Pemberton to the plant has been put in operation. Altogether about 60 houses are connected to the system.

In spite of the extremely primitive character of this plant, it appears to dispose of the sewage satisfactorily. The settling basin is not objectionable in smell or appearance, and the sewage disappears in the ground within a short distance of the basin. This is probably due to the fact that the sewage is not only small in quantity but very weak, many of the house connections contributing roof water only.

PLAINFIELD.—The septic tanks, contact beds and sand filters at Plainfield have been described in the State Board of Health Report for 1909, p. 243.

This plant was inspected on January 9th, March 11th, July 31st, September 7th, September 20th and on October 11th, 1911. The plant is very heavily overloaded, so that it is impossible to hold the contact beds full, and the

contact beds are badly clogged. Steps are being taken by the city to have additional beds built.

There has been some complaint about the odor from the stream below the plant. The effluent is regularly analyzed, and daily putrescibility tests of the effluent made by the chemist have shown uniform non-putrescibility. Samples taken by representatives of the Board, however, have all decolorized methylene blue in from one to seven days.

PLEASANTVILLE.—New Rodney Hotel. The sewage from the New Rodney Hotel, at Pleasantville, is treated in a private plant consisting of septic tanks, a flush tank and a stone bed.

The septic tanks are two old brick circular cesspools, which are used in series, and appear to remove the solids satisfactorily. The flush tank discharges automatically to a stone filter, 12 feet by 8 feet and filled with 2 feet of crushed stone. The sewage passes through this bed rapidly, and flows into a ditch draining to tidewater.

Inspections were made on July 11th, July 31st, September 9th and October 20th, 1911, and the plant was found in good condition. The effluent was well clarified, but a sample taken October 20th, decolorized methylene blue in less than twelve hours. More, however, could scarcely be expected from a shallow stone filter through which sewage is run without a period of contact.

POINT PLEASANT.—The Point Pleasant septic tank was described in the State Board of Health Report for 1909, p. 244. This tank was inspected on December 21st, 1910, and found badly in need of cleaning. This was ordered done but had not been done at the time of reinspection, July 3d, 1911.

PRINCETON.—The three sewage disposal plants serving the three sewer districts of Princeton—known as the "College System," the "West System" and the "Northeast System"—have been described in the State Board of Health Report for 1909, p. 244.

Inspections were made on December 16th, 1910, and on January 3d, September 18th and October 30th, 1911. The sand beds at the Northeast Field were not in use during the first half of 1911, sewage being by-passed to the old irrigation area with unsatisfactory results. The use of the beds, however, was resumed about August 1st, 1911.

The distribution on these beds is poor, and there are fungus growths in the effluent, analysis of which shows a fair degree of purification.

The College Field is densely overgrown with weeds, and the distribution is poor. At times, it is said, that sewage flows over the surface of the ground directly to the lake.

At the West Field, the distribution is not changed frequently enough from one part of the field to another, and it is possible for sewage to run directly to the brook on account of the marshy condition of the lower part of the field.

QUARRVILLE.—Horton & Lewis Cream Company. See State Board of Health Report for 1910, p. 367.

RAHWAY.—New Jersey State Reformatory. The "biolytic" tank and hypochlorite disinfection plant for treating the sewage of the New Jersey State Reformatory has been described in the State Board of Health Report for 1910, p. 367.

Inspections were made on March 17th, March 31st, August 2d and on September 20th, 1911. On March 31st, it was found that the plant was being by-passed by discharging the sewage into a storm sewer. On the other occasions, however, it was found to be turning out a well clarified effluent treated with about 5.5 parts per million of available chlorine.

The "biolytic" tank, when inspected on September 20th, had a scum on the surface about 4 feet thick.

RALSTON.—See State Board of Health Report for 1910, p. 368.

RED BANK.—The septic tanks at Red Bank have been described in the State Board of Health Report for 1909, p. 245. As a result of inspections made on December 6th and December 27th, 1910, it was directed that the tanks be cleaned out as they were nearly filled with solids. This was done about March 1st, 1911,—the only cleaning the tanks have had in about six years of use.

Subsequent inspections were made on March 20th, July 1st, July 8th and on September 16th, 1911, and while conditions were much improved, the plant was turning out a cloudy effluent visible in the vicinity of the point of discharge. Steps are just being taken toward improving the purification although such improvement was ordered prior to May 1st, 1909, and in spite of the fact that oysters are taken from the Shrewsbury river about a mile down stream.

RIDGEWOOD.—The sewage disposal plant at Ridgewood has undergone considerable alteration within the past two years, and further improvements are now being made.

At present, sewage flows first to a septic tank, 35 feet by 25 feet, but as this tank is filled with solids, practically raw sewage flows to the contact beds. As no proper provision for draining this tank was made, it will be abandoned as soon as the improvements now under construction are completed.

The improvements consist of two sludge separation tanks and a sludge disposal area. The first tank is 32 feet by 11 feet in plan, with a submerged downward flow wooden screen, which is expected to remove the lighter sludge. The sewage is to pass through pipes near the bottom of this tank to the second upward flow basin, which is 32 feet by 23 feet. The effluent is skimmed at the surface by three sets of four channel beams, and can be taken through the old septic tank or direct to the contact filters. The tanks are nearly completed.

The sludge in the submerged screen and in both tanks is to be removed daily, or more frequently, through blow-out valves to a sludge bank. Here it is to be drained and removed weekly to a sludge bed where it will be covered with loam, if necessary, to avoid odors.

Two of the four contact beds are 60 feet by 120 feet, and the other two are 52 feet by 120 feet, and all are filled with about 30 inches of coke and stone. The filling and emptying are controlled by an automatic Aerlock device. Formerly this apparatus gave a great deal of trouble, but it was recently overhauled and has run for over three months without needing any attention. The beds are ridged and the hollows are heavily grown up with water-cress, tomatoes, &c.

Below the primary beds are four concrete basins with sloping floors, each 50 feet by 60 feet. These were formerly used as "wave beds;" at present however, all the stone has been removed except several ridges running across the basins. These ridges have been planted with water-cress, which has grown luxuriantly, and most of the primary effluent passes through the stone and water-cress before being discharged.

Inspections were made on December 10th, 1910, and on February 23d and March 22d, 1911, the automatic control being found out of commission in each case. Later inspections, however, on July 31st and September 19th, 1911, showed conditions much improved. The effluent has in all cases been clear but putrescible, decolorizing methylene blue in one to two days.

RIVERSIDE.—The Riverside sewage disposal plant has been described in the State Board of Health Report for 1910, p. 368.

Inspections have been made on June 27th, July 1st, July 19th, September 1st and October 5th, 1911. The plant was found in fairly good condition and well taken care of, but it is heavily overloaded. The flow was roughly estimated at 275,000 gallons per day, representing a rate of over a million gallons per acre per day on both the contact beds and the sand beds. The effluent, however, has been non-putrescible whenever sampled.

ROEBLING.—The screen chamber, sedimentation tanks, dosing chamber, contact beds and sand beds at Roebing, have been described in the State Board of Health Report for 1910, p. 368.

Inspections were made on December 19th, 1910, on February 14th, April 1st, June 27th, July 15th, September 11th and October 23d, 1911. The plant was found in fairly good condition and turning out a non-putrescible effluent on all but one occasion. The sludge bed, however, is unsatisfactory, being dug in clay, so that instead of draining, it fills up and overflows directly into the river.

SEA GIRT.—The Sea Girt septic tank was described in the State Board of Health Report for 1910, p. 369.

Inspections were made on July 3d and August 28th, 1911. It was found that the permanent outfall, consisting of 650 feet of 8-inch pipe had never been placed, although the pipe was lying on the beach. In the meantime, sewage is being discharged on the beach at about half-tide level.

SEA GIRT.—State Camp. The septic tank of the State Camp, at Sea Girt, is described in the State Board of Health Report for 1910, p. 369.

Inspections were made on July 3d and August 23d, 1911. It was found that the gates connecting the well into which the ejectors discharge with the septic tanks had never been opened, so that sewage had to get into the tanks by overflowing the dividing wall just below the wooden cover of the well. In this way, some sewage had escaped to the top of the tanks, leaving there a deposit of fecal matter and paper. The gates opening into the tanks were removed, and overflows were thus prevented.

SKILLMAN.—New Jersey State Village for Epileptics. Construction has begun on a new disposal plant for the New Jersey State Village for Epileptics, at Skillman, consisting of a septic tank, stone contact beds and sand filters. On inspection made on October 23d, 1911, it was found that the excavations for the tank and beds were nearly completed, and the forms for concrete nearly ready to be put in place. A full description will be given on the completion of the plant.

SMITH'S LANDING.—Atlantic County Asylum for Insane. The hypochlorite disinfection plant treating the sewage of the Atlantic County Asylum for Insane, at Smith's Landing, was put in operation in May, 1911. It consists of a wooden tank 4 feet 6 inches by 3 feet 6 inches, by 2 feet 6 inches, in which the solution is mixed; and an underground retention tank 15 feet by 7 feet and 6 feet deep, at the entrance of which the bleach is added by a pipe coming directly from the lower part of the mixing tank.

Inspections were made on September 19th and October 20th, 1911. The turning up of the hypochlorite pipe above the sludge level, and the installation of a small constant-head dosing tank has been recommended.

SMITHVILLE.—A hotel and several houses are all the buildings connected with the sewage disposal plant at Smithville, which consists of three circular tanks, each about 8 feet in diameter and 7 to 8 feet deep, and 6 to 10 lines of absorption tiles radiating from each tank. The tanks and absorption lines

This plant was inspected on September 14th, 1911, and it was found that the beds had become so clogged by improper operation that all were constantly flooded. It has been proposed that these beds be abandoned, and that the sewage be disposed of by broad irrigation on a large tract of land upon which corn and alfalfa are grown.

WASHINGTON.—Washington is a town of about 3,600 inhabitants, situated in the hills of Warren county, on the Shabbecong creek. Thus far, 207 permits for house connections have been issued, and about 200 have been made.

The plant consists of a grit chamber, 6 feet by 27 feet by 7 feet, and a concrete septic tank divided into two chambers, each 48 feet by 13 feet and 7 feet deep to the flow line. From the tank sewage flows to a regulator house in and around which the automatic apparatus for operating the contact beds is placed. This apparatus consists of a tipping frame and buckets for dosing the beds alternately, and floats and levers for discharging the beds. It is similar to the one in use at Morristown.

The contact beds are four in number, each 43 feet square, and filled with 6 feet of broken stone. The dose is applied by means of a 12-inch tile pipe laid with open joints, and the effluent collected in tile underdrains.

Each contact filter discharges its effluent on to one of the four sand filters. Each of the latter is 9½ feet by 4½ feet, and filled with 3 feet of sand on 6 inches of gravel.

This plant was inspected on May 1st, June 10th, July 15th, July 28th and on September 30th, 1911. On June 10th, the automatic apparatus for controlling the contact beds was out of order, but at other times the plant was found in good condition. The effluent, however, was putrescible when sampled both on July 28th and September 30th.

WATER WITCH.—See State Board of Health Report for 1909, p. 247.

WENONAH.—The two sewage disposal plants at Wenonah, located near Mantua avenue, and near the corner of Monroe and Princeton avenues, respectively, have been described in the State Board of Health Report for 1909, p. 247. These were inspected on September 13th, 1911. It was found at the Mantua avenue plant that the septic tank was filled with solids; that the coke had been removed from the strainer, and that both beds were clogged, so that sewage was not passing through the sand but was overflowing directly to the creek. The Monroe and Princeton avenues plant had been entirely abandoned and the sewage by-passed directly to a pond draining into Mantua creek.

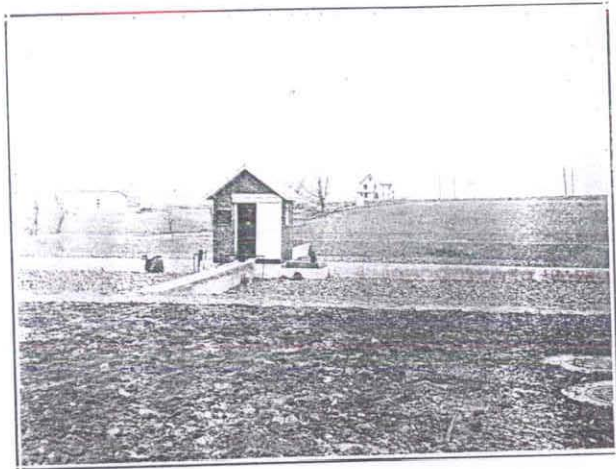
WESTFIELD.—The Westfield sewage disposal plant, consisting of a screen chamber, sand beds and irrigation beds, has been described in the State Board of Health Report for 1909, p. 248.

This plant was inspected on January 10th, April 12th, August 1st, August 17th and on September 7th, 1911, and the beds were found at all occasions heavily overloaded and clogged. The dikes around the irrigation field are not high enough to impound all the sewage that is put upon it, and during the heavy rains last spring, raw sewage overflowed directly into the brook.

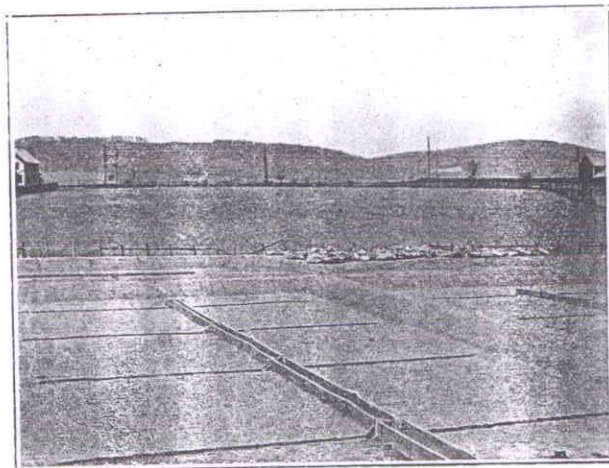
Plans are being made to build additional sand beds, which are badly needed.

WOODBURY.—At Woodbury, the sewage is supposed to be stored during high tide in a concrete tank 80 feet by 80 feet, about 6 feet deep, and divided into two equal chambers. At the beginning of ebb tide, it is supposed to be discharged by hand.

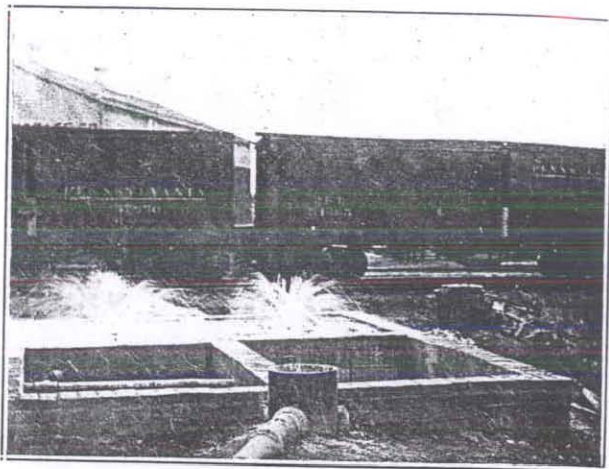
On inspection on September 13th, 1911, it was found, however, that the tank is discharged only once a day at high tide, and the discharge gate is closed as soon as the tank is emptied. The tank then fills in 6 to 8 hours, and



WASHINGTON: Septic Tank and Contact Beds.



WASHINGTON: Sand Beds



WOODSTOWN: Plant for Supplee Alderney Dairy.



WOODSTOWN: New Sand Bed for Town Plant.

during the balance of the 24, discharges continuously by overflowing to the creek.

The tank should be emptied twice a day at high tide, and should be allowed to run during part of the ebb tide, so as to reserve sufficient capacity for the flood-tide flow.

WOODSTOWN.—The septic tank and sand filters at Woodstown have been described in the State Board of Health Report for 1909, p. 249.

Inspections of this plant were made on December 23d, 1910, and on March 20th, May 23d, July 13th, July 26th, September 13th and on October 19th, 1911.

It was found that the scum removed from the tank the last time it was cleaned, had been piled around the tank and never removed. The tank was nearly filled again with solids at the last inspection, and needed cleaning badly.

The septic tank has no provision for draining and cleaning. A drain pipe and a sludge pipe and more care in handling the sludge, would be a great improvement.

The filter beds were found in good condition and turning out a clear, non-putrescible effluent.

WOODSTOWN.—The Supplee Alderney Dairy. As a result of inspection visits on April 4th, May 23d and June 2d, 1911, and in accordance with the advice of the Board, the Supplee Alderney Dairy constructed a disposal plant to take care of the waste from their creamery at Woodstown. An inspection on July 26th, 1911, showed the plant to be completed and in operation.

The plant consists of two sedimentation tanks and two small coke filters. Soda is used in the wash water, and lime is added just before it reaches the sedimentation tank: this throws down a heavy precipitate and the clear liquid is pumped to the filter. The tanks are used alternately, each being sufficiently large to hold a day's flow.

The sediment that collects in the tanks is removed every two or three weeks.

An inspection on October 19th, 1911, showed the plant to be in good condition, and preventing nuisance in the stream below.

WORTENDYKE.—Granite Linen Mills. The sand beds upon which the sewage of the Granite Linen Mills, at Wortendyke, is treated have been described in the State Board of Health Report for 1910, p. 366.

Inspections on July 5th and September 20th, 1911, showed that the distribution was poor, and that solid matter passed readily to the surface of the beds. A tank for settling out such material would be an improvement.

Notwithstanding these defects, the plant appears able to handle the sewage as the flow is small, and much of the time the sewage is practically all clean water from washing machines.

TABULAR SUMMARY OF THE PRINCIPAL SEWAGE DISPOSAL PLANTS IN THE STATE OF NEW JERSEY—Continued.

PLACE.	SERVICE.	SYSTEM.	APPROX. COST.	ENGINEER.
Princeton III.	Municipality	Broad irrigation		Albright & Mebus.
Quarryville	Creamery	Septic tank, secondary treatment to be installed.		Edward Howell.
Ratston	Children's Home.	Septic tank, tile absorption		E. H. Phelps.
Rahway	State Reformatory.	Disinfection		T. H. Grant.
Red Bank.	Municipality	Grit chamber, septic tank.		
Ridgewood	Municipality	Septic tank, primary contact.	\$20,087.77	G. E. Hill.
Riverside	Municipality	Septic tank, primary contact, sand filtration.	26,398.00	Wm. H. Boardman.
Roebling	Municipality	Septic tank, primary contact, sand filtration.	2,800.00	I. Harby.
Sea Girt I.	Municipality	Septic tank	5,475.00	Pugh & Hubbard.
Sea Girt II.	State Camp.	Septic tank		James Owen.
*Skillman	State Institution.	Septic tank, contact beds, land filtration.	\$3,022.00	Clyde Potts.
Smith's Landing	Asylum	Septic tank, disinfection.		
Smithville	Municipality	Septic tank, tile absorption.		W. W. Young.
*South River.	Municipality	Septic tank, sand filtration.	9,810.00	Pugh & Hubbard.
Spring Lake.	Municipality	Three septic tanks.		
Stone Harbor.	Municipality	Disinfection	\$600.00	E. H. Phelps.
Trenton I.	Factory	Septic tank, flush tank, coke strainer bed.		Bact. Sewage Purification Co.
Trenton II.	P. R. R. Shops.	Septic tanks		Bact. Sewage Purification Co.
Trenton III.	I. O. O. F. Home.	Septic tank, sand filtration.	2,800.00	Clyde Potts.
Three Bridges.	Creamery	Chemical precipitation		
Ventnor	Municipality	Two disinfection plants		E. B. Phelps.
Verona	Newark City Home.	Sub-surface irrigation		Alexander Potter.
Vinceland I.	Municipality	Settling basin, sand filtration.	\$18,000.00	
Vinceland II.	Children's Home.	Septic tank, sand filtration.		
Washington	Municipality	Septic tank, primary contact, sand filtration.	\$1,500.00	Clyde Potts.
Water Witch.	Municipality	Septic tank		Bact. Sewage Purification Co.
Wenonah I.	Municipality	Septic tank, sand beds.		Bact. Sewage Purification Co.
Wenonah II.	Municipality	Septic tank		Wm. C. Cattell.
Westfield	Municipality	Screening, land filtration.		Wm. C. Cattell.
Woodbury	Municipality	Detention tidal tank.		William Masby.
Woodstown	Municipality	Septic tank, sand beds	\$2,722.00	G. E. Hill.
Woodstown	Creamery	Chemical precipitation, under filtration.		

* The plants marked with an asterisk are in process of construction and the cost is estimated.

CONTINUOUS RECORD OF ANALYSES OF SEWAGE AND EFFLUENTS.

Results in parts per million except where otherwise stated.

TOWN.	DATE.	CHARACTER OF SAMPLE.	SOLIDS.										NITROGEN AS						OXYGEN CONSUMED (30 min. boiling).		BACTERIA (per cc.)									
			Turbidity.	Sediment.	Total.	Fixed.	Volatile.	Total in Solution.	Fixed in Sol.	Volatile in Sol.	Total in Suspension.	Fixed in Susp.	Volatile in Susp.	Chlorine.	Total (Kjeb).	Total (Kj.) in Sol.	Free Ammonia.	Organic (dlif.).	Organic (dlif.) in Sol.	Nitrites.	Nitrites.	Total.	In Solution.	Oxygen Dissolved.	At 30° C.	At 37° C.	Red Colonies at 37° C.	B. Coll.	Relative Stability (per cent.)	
Moorestown	Dec. 21, 1910.	Raw Sewage	200	Slight	304	137	167						35.0	30		19.0	11.0					64.0			1,400,000	350,000	300,000	100,000		
"	Dec. 21, 1910.	Effluent	Slight	0	173	107	86	173	107	66	0	0	30.0	32	22.0	14.0	8.0	8.0				14.0	14	50	100,000	50,000	40,000	10,000		80
"	Jan. 25, 1911.	Raw Sewage	100	Slight	243	371	123						35.0	30		27.0	3.0					45.0			750,000	80,000	80,000	10,000		50
"	Jan. 25, 1911.	Effluent	0	0	152	91	61	152	91	61	0	0	20.0	12	12.0	10.0	2.0	2.0				18.0	16	4.00	70,000			1,000		96 +
"	Mar. 7, 1911.	Effluent																												96 +
"	Mar. 7, 1911.	Effluent																												96 +
"	Mar. 7, 1911.	Effluent																												96 +
"	Mar. 13, 1911.	Effluent																												50
"	Sept. 5, 1911.	Effluent																												50
Morris Plains	Feb. 27, 1911.	Septic Sewage	150		248	115	133						25.0	35		30.0	5.0					43.0								96 +
"	Feb. 27, 1911.	Effluent	0	0	139	99	40	139	99	40	0	0	30.0	12	12.0	9.0	3.0	3.00	.090	6.00		12.0	12	3.50						96 +
"	Sept. 21, 1911.	Effluent																												96 +
Morristown	Feb. 20, 1911.	Effluent																												96 +
Newton (Clinton street)	Feb. 3, 1911.	Septic Sewage	60		210	128	85						40.0	22		12.0	10.0					37.0			100,000			10,000		96 +
Newton (Sparta street)	Feb. 3, 1911.	Effluent	0	0	351	293	58	351	293	58	0	0	5.0	20	20.0	13.0	17.0	17.0		1.00		17.0	17	3.00	5,000	1,700	1,700	1,000		50
"	Feb. 3, 1911.	Septic Sewage	50		178	99	79						25.0	26		15.0	11.0					37.0			60,000	10,000	10,000	10,000		96 +
"	Feb. 3, 1911.	Effluent	0	0	293	194	99	293	194	99	0	0	30.0	22	22.0	11.0	11.0	11.0		3.00				6.00	9,000	900	800	100		96 +
Overbrook	Dec. 27, 1910.	Septic Sewage	100	Slight	284	155	129						15.0	30		13.0	17.0					53.0			530,000	80,000	80,000	10,000		96 +
"	Dec. 27, 1910.	Effluent	0	0	201	141	60	201	141	60	0	0	20.0	10	10.0	2.0	8.0	8.0		4.00		26.0	26	6.00	10,000	1,000	1,000	10		96 +
"	Feb. 6, 1911.	Effluent																												96 +
Plainfield	Sept. 21, 1911.	Effluent	600	500	628	347	261	500	350	159	118	17	115.0	65	55.0	25.0	36.0	26.0				110.0	84	3.00	2,750,000	270,000	240,000	100,000		96 +
"	Jan. 9, 1911.	Effluent	200		278	245	33	278	245	33	0	0	50.0	15	15.0	5.0	10.0	10.0		3.50		40.0	40	3.00	610,000	50,000	40,000	1,000		80
"	Mar. 11, 1911.	Raw Sewage	350	200	523	268	255						50.0	58		35.0	23.0					86.0			1,750,000	70,000	10,000	100,000		96 +
"	Mar. 11, 1911.	Effluent—Filter No. 2	100	Slight	368	281	87						25.0	20		13.0	7.0					27.0		2.00	450,000	30,000	20,000	1,000		37
"	Oct. 11, 1911.	Effluent—Bed No. 14																												37
"	Oct. 11, 1911.	Effluent—Bed No. 14																												37
"	Oct. 11, 1911.	Effluent—Bed No. 6																												96 +
"	Oct. 11, 1911.	Raw Sewage	350	280	701	402	299	519	338	181	132	64	85.0	57	29.0	27.0	30.0	2.0	.000	.20		85.0	68							97 +
"	Oct. 11, 1911.	Mixed Effluent	70	10	391	325	66	378	318	60	13	7	80.0	14	11.0	10.0	4.0	1.0	.040	2.50		90.0	30	1.60						21
"	Oct. 11, 1911.	Filter No. 6																												11
Pleasantville	Oct. 20, 1911.	Effluent																												11
Princeton	Dec. 16, 1910.	Effluent																												21
"	Sept. 18, 1910.	Effluent	30	5	591	482	109	372	282	90	219	200	104.0	11	10.0	9.0	2.0	1.0	.120	3.0		16.0	15	2.37						80
"	Sept. 18, 1910.	Raw Sewage	650	270	3,026	2,179	847	2,375	2,075	300	651	104	1,012.0	40	28.0	25.0	15.0	3.0	.000	.20		10.1	72							50
Ridgewood	Oct. 30, 1911.	Effluent																												11
"	Dec. 10, 1910.	Effluent																												11
"	Feb. 23, 1911.	Effluent																												37
"	Mar. 23, 1911.	Effluent—Bed No. 1																												21
"	Mar. 23, 1911.	Effluent—Bed No. 3																												21
"	July 31, 1911.	Effluent																												30
"	Sept. 19, 1911.	Effluent																												37
"	Sept. 19, 1911.	Effluent																												30
Riverside	June 27, 1911.	Effluent—Filter No. 2																												96 +
"	June 27, 1911.	Effluent																												96 +
"	Sept. 1, 1911.	Effluent—Filter No. 5																												96 +
"	Sept. 1, 1911.	Mixed Effluent																												99 +
"	Oct. 5, 1911.	Septic Sewage	2,000	1,925	2,061	996	1,065	663	430	233	1,398	566	832	90.0	32	26.0	18.5	13.5	7.5	.400	6.00	42.0	27							

Official Actions.

The following is a brief summary of the actions taken by the Board relative to matters pertaining to water-supplies:

ALLENTOWN.—An inspector of this Division visited Allentown, on May 16th, 1911, and reported upon the filtration plant of that borough as follows:

"The floor covering the clear water basin is of wood and is in very poor condition. It is getting into the filtered water. This entire floor should be replaced either with one of concrete or a double board floor, preferably the first, and should be brought up flush with the filter tank, thus doing away with the open space immediately around the filter.

"No coagulant is being added to the water. Alum should be applied in order to aid the work of the filter.

"In regard to the filter itself, it was found that the attendant had not been properly informed as to the proper method of washing and cleaning the filter. The system was thoroughly explained to him and the filter thoroughly washed."

Upon receipt of this report, the mayor and the council of Allentown were ordered by this Board to correct the defects enumerated.

An inspection of the plant made on September 6th, 1911, revealed the fact that the floor covering the filtered water had not been repaired. The filter was being washed properly and a small amount of alum was being delivered directly onto the filter. It was recommended that a suitable alum dosing device be installed, together with apparatus for the application of soda-ash when necessary. It was further recommended that an effort be made to abate the numerous dangerous pollutions on the stream from which the water is taken. As an alternative to the abatement of these pollutions, it was suggested that water of a better sanitary quality might be obtained from springs located a short distance from the plant.

A letter was forwarded to the mayor and council, calling attention to the conditions reported, and embodying the recommendations mentioned above. A reply was received from the mayor on October 3d, in which it was stated that steps had been taken to put the filtration plant in proper operating condition, and assurance was given that every effort would be made to abate all pollutions above the intake.

ASBURY PARK ESTATES.—On August 5th, 1911, Mr. Edward Gottheimer, of New York, applied to this Board for permission to supply water to the residents of Asbury Park Estates, Ocean township, Monmouth county, New Jersey. An inspection of the source and distributing system was made and reported upon as follows:

"The water is derived from a spring issuing from a hillside, and as there is no habitation within a considerable distance, any pollution of the source is unlikely.

"From the spring the water flows directly into a basin about 30 feet by 40 feet, dug into the hillside, has a natural sand bottom, while the sides are turfed. This

reservoir is uncovered, and, being located near the foot of a hill, it would receive surface wash at times of rain.

"From this reservoir the water runs into a 3-inch iron pipe and is pumped by a gasoline engine up to a 1,000-gallon cedar storage tank situated on a hilltop. This tank is used to maintain pressure, and the water is distributed from the tank to the houses.

"Inspection indicated that the system, as installed, is but a temporary affair; the pipe-lines are in some instances laid over the surface of the ground; the pumping engine is installed in a shed roofed over, but open on all sides, and the same line of pipe which conveys the water from the pump to the storage tank, also distributes it to the consumer."

At a meeting of the Board held August 22d, 1911, permission to supply this water to the residents of Asbury Park Estates, was refused.

BERNARDSVILLE.—Somerset Spring Water Company. On August 22d, 1911, the application of the Somerset Spring Water Company for permission to supply water for potable purposes from a spring located on the property of Mr. S. S. Swaim, in Bernards township, was granted subject to the usual conditions of maintenance.

BOONTON.—United Water Supply Company. Application was made by the United Water Supply Company, of Boonton, for permission to supplement their present supply with water from the so-called "Richard's Spring," situated in the northeasterly portion of Boonton.

An inspection was made of this spring, and on May 9th, 1911, the Board refused to approve this source of supply.

On petition of the Water Company, a hearing was held on June 6th, 1911. Supplementary inspections of the spring and its surroundings were made and, on June 27th, 1911, this Board confirmed its former action in refusing to grant permission to the company to furnish water for potable purposes from "Richard's Spring," on the ground that the water-shed of the spring was not controlled by the company and, therefore, the water of the spring could not be protected from possible contamination.

BRANT BEACH.—Beach Haven Realty Company. On June 13th, 1911, permission was granted the Beach Haven Realty Company, of Philadelphia, Pa., to furnish water for potable purposes from an artesian well recently finished by said company, at Brant Beach. Long Beach township, Ocean county, N. J., subject to the usual conditions and to the submission of plans of a system for distribution of the water.

BRIDGEPORT.—Bridgeport Water Company. On August 8th, 1911, permission was given to the Bridgeport Water Company to supply water to consumers in the village of Bridgeport, subject to such conditions of operation and purification as this Board may from time to time require and to the submission of plans of the distributing system.

The water is obtained from four drilled wells varying in depth from 43 feet to 80 feet.

BRIDGETON.—Plans for a new water-supply for the city of Bridgeton were approved on January 31st, 1911, and construction was begun in September, 1911. The supply is to be taken from Tumbling Dam pond, and subjected to filtration in six rapid sand gravity filters; sulphate of aluminum being added as coagulant.

Pending the completion of this plant, the present water-supply is being disinfected with chloride of lime, about 0.4 parts available chlorine being added to 1,000,000 parts of water.

CROSSWICKS.—Crosswicks Water Company. Plans for a water-supply to furnish water to the residents of Crosswicks, were submitted by the Crosswicks Water Company to the Board, which plans were approved on June 6th, 1911.

The company derives its supply from springs. A connection with Doctor's creek, shown on the plans submitted, was ordered to be removed.

ELMER.—Elmer Water Company. Plans for a water-supply system were submitted by the Elmer Water Company, of Elmer, in April, 1911. These plans were approved on May 9th, 1911, subject to the usual conditions of construction, maintenance and operation.

Water is derived from a drilled well, 65 feet deep. This source was approved on August 22d, 1911.

EWING TOWNSHIP.—Mr. George J. Rittman. Permission to sell water from a spring on the property of Mr. Lewis Keeler was denied Mr. George J. Rittman, of Trenton, because of the fact that analysis indicated the water to be unfit for potable purposes.

HADDONFIELD.—On May 20th, 1911, the borough of Haddonfield requested permission to add to their supply, a spring located near their pumping station. Analysis of the water and inspection of the surroundings indicated that the water was of good sanitary quality and the likelihood of pollution remote, and permission to use this source of supply was therefore granted them June 6th, 1911.

A concrete basin has been constructed about the spring, the bottom being filled to a depth of one foot with crushed stone. This basin is tightly covered. The water from the spring flows through a cast-iron pipe to the suction well.

HIGH BRIDGE.—On December 13th, 1910, permission was granted the borough of High Bridge to connect the borough mains with the new source of water-supply.

HOBOKUS.—Plans for a water distribution system for the borough of Hobokus were approved on December 28th, 1910, subject to the usual conditions of construction and maintenance, and with the proviso that hydrants or blow-off cocks be placed on all dead ends. Water is furnished to the borough by the Bergen Aqueduct Company.

HOBOKUS.—Mr. Albert Winter. Application having been made for permission to furnish water for potable purposes to the residents of the township of Hobokus, by Mr. Albert Winter, of Mahwah, an inspection of the source of such water was made.

The water is taken from a spring which has its rise beneath the right-of-way of the main line of the Erie railroad, about three-quarters of a mile south of the Mahwah station. The water from this spring issues from the westerly embankment of the Erie railroad through a terra-cotta pipe. Owing to the location of the spring, no inspection of its actual source could be made, but as there were no houses within one-half mile to the westerly of the right-of-way, and all drainage from them being in a northerly direction, it is safe to assume that the source is not liable to pollution, for on the easterly side of the right-of-way, the ground rises abruptly to a height of some 40 to 50 feet and there are no habitations or cultivated areas within a considerable distance. The possibility of pollution by filtration through the road-bed is very remote.

The analysis of samples from this spring indicated that the water was of good quality.

On May 16th, 1911, permission was granted Mr. Winter to supply water from this source to the residents of Hobokus township, permission being sub-

ject to such conditions of distribution as this Board may from time to time require and subject to submission of plans of a collecting and distributing system.

HOPEWELL.—Mr. John G. Burton. Application having been made for permission to market a bottled water in this State, by Mr. John G. Burton, of Hopewell, an inspection of the proposed source was made on September 28th, 1911.

The water is taken from a driven well, 113 feet deep by 6 inches in diameter, located near a stair factory owned by Mr. Burton, at Hopewell. The well is cased to a depth of 105 feet and is driven through rock for the last 8 feet of its depth. The water is to be labeled "Artois Table Water."

Samples of the water having been submitted for analysis, and results obtained, indicating the water to be of satisfactory sanitary quality, the Board, on October 10th, 1911, granted permission to Mr. Burton to bottle water from this well; his plant being subject to such conditions of construction, operation and maintenance as the Board may from time to time require.

KENILWORTH.—The borough of Kenilworth having applied for permission to purchase water from the New Orange Park Water, Heat, Light and Power Company, an inspection of the source of supply of said company was made on October 6th, 1911.

The supply is derived from a drilled well, 275 feet deep by 8 inches in diameter, located in the borough of Kenilworth, and within a few feet of the plant of the New Orange Park Water, Heat, Light and Power Company. The well is driven through rock for the greater part of its depth and is cased down to the rock.

From the well, the water is lifted by air to a covered cement reservoir, 12 feet by 12 feet by 20 feet, situated beneath the power house. From this reservoir, the water is pumped to a standpipe of 141,000 gallons capacity and flows by gravity to the consumers. At present, the company has about 25 house connections. The company has a single pump of 300,000 gallons capacity.

The New Orange Park Water, Heat, Light and Power Company will not extend its mains, but merely propose to furnish water to the borough of Kenilworth at fixed meter charge, the borough to lay all mains and furnish all other necessary equipment.

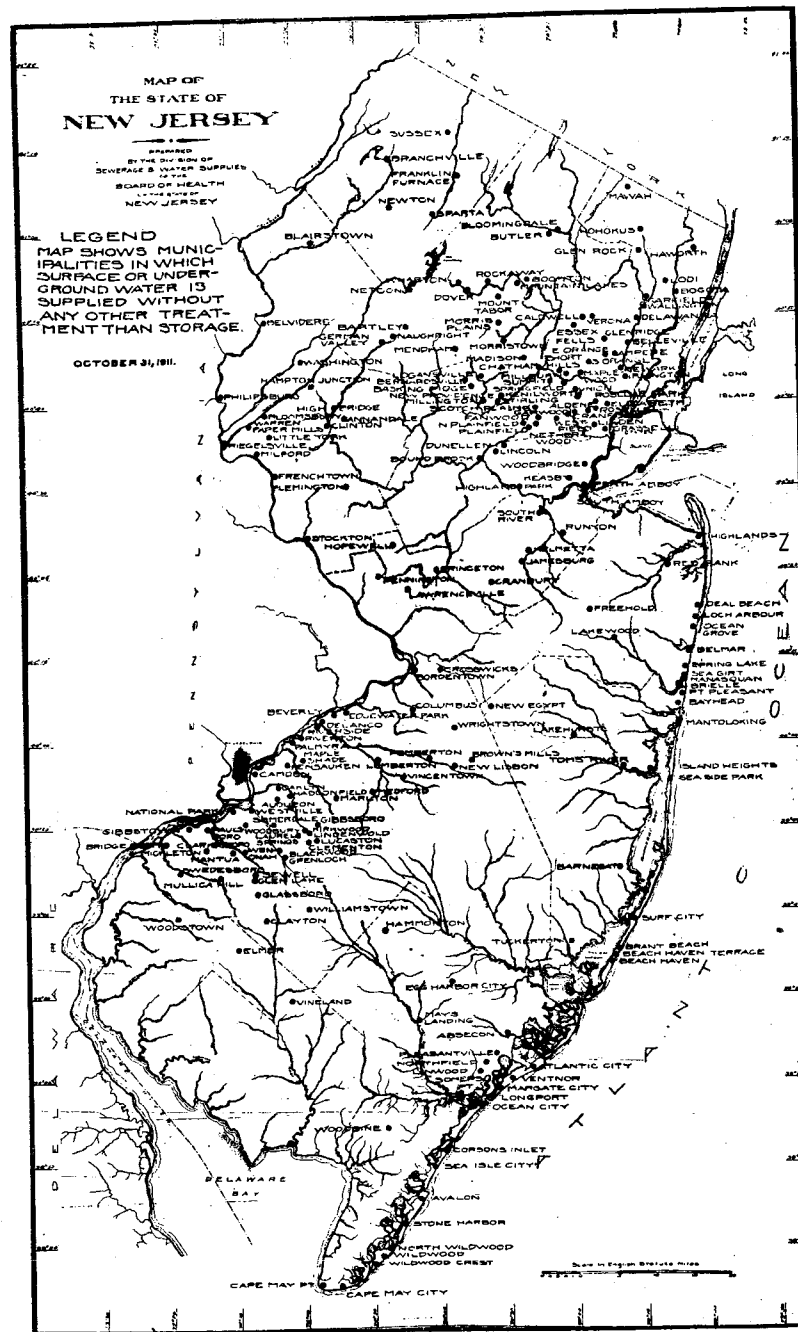
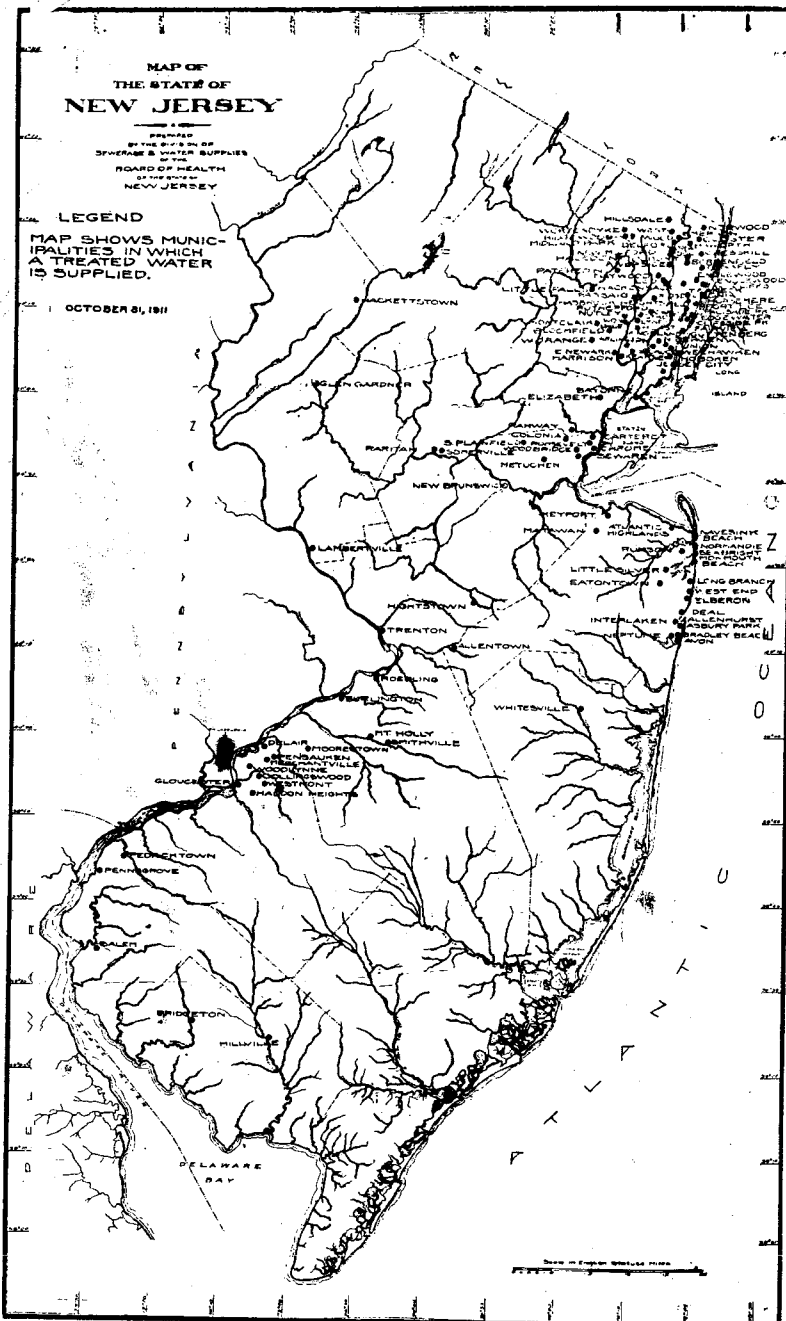
On October 10th, 1911, the borough was granted permission to furnish water supplied from a drilled well by the New Orange Park Water, Heat, Light and Power Company, to consumers in Kenilworth for potable purposes, with the understanding that the borough authorities submit to the Board for approval a plan of the water piping system to be used in the borough.

On October 24th, 1911, plans for a distributing system of water pipes in the borough were approved subject to the usual conditions of construction and maintenance and subject to the placing of hydrants on all dead ends of pipes.

KIRKWOOD.—Lakeside Park Land Company. The application of the Lakeside Park Land Company for permission to furnish water from an artesian well was granted, subject to the usual conditions of construction and maintenance, and subject to the submission of plans of the distributing system.

MILFORD.—On November 29th, 1910, plans for water-supply and distributing systems for the town of Milford were approved, subject to such conditions of construction and operation as the Board may from time to time require.

MORRIS PLAINS.—On October 9th, 1911, a report was received of a very complete and extended investigation of the conditions of the water-supply for



the New Jersey State Hospital, at Morris Plains. This report covered all of the existing conditions and made numerous recommendations for immediate improvements.

MOUNTAIN LAKES.—Hillcrest Water Company. On July 25th, 1911, plans of the water-supply system of the Hillcrest Water Company were approved subject to the usual conditions of construction and maintenance.

Water is obtained from a drilled well 340 feet deep.

NEW BRUNSWICK.—During the spring of 1911, a plant was installed for the disinfection of the New Brunswick water-supply by chloride of lime.

This hypochlorite plant consists of two barrels in which the hypochlorite is mixed. From these the liquid is drawn off into three other barrels and they are filled with water to the top, making a weaker solution. From these barrels, the solution feeds to a half-barrel, which is used as a regulating chamber, the liquid being kept under a constant head by means of a float. About 40 pounds of hypochlorite are used per day, or about 0.4 parts available chlorine per 1,000,000 gallons.

SEWELL.—Sewell Water Company. On August 22d, 1911, the application of the Sewell Water Company for permission to furnish water for potable purposes from an artesian well, at Sewell, to consumers in said village, was approved subject to the usual conditions of construction and maintenance.

SOUTH BOUND BROOK.—Bound Brook Water Company. Plans for an extension of the water mains of the Bound Brook Water Company into the borough of South Bound Brook, were approved on March 7th, 1911.

SOUTH PLAINFIELD.—Middlesex Water Company. Inspection of the filter of the Middlesex Water Company, at South Plainfield, showed that it was not in proper working condition. The company was notified and during the month of July, the filter was thoroughly overhauled and put in good shape.

SPRING LAKE.—On March 14th, 1911, plans for a water-supply system for the borough were approved, subject to the usual conditions of maintenance and construction, provided that detailed plans of the collecting reservoir were submitted to this Board, and that the sewer pipe leading from the works be connected with the borough sewer system.

TRENTON.—On July 11th, 1911, plans for a water disinfection plant were approved, with the understanding that this was only a temporary expedient for the purification of the water to be used until a water filtration plant was installed by the city.

TOWN.	SUPPLIED BY	ESTABLISHED.	SOURCE.	TREATMENT.	APPROXIMATE DAILY CONSUMPTION IN GALLONS.
Crosswicks	Crosswicks Water Co.	1911	Springs.		
Deal	New Jersey Water and Light Co.	1905	Six drilled wells, 380 to 585 feet deep.		290,000
Deal Beach	New Jersey Water and Light Co. (see Deal)				
Deal Beach	Flintera Manor Water Co. (see West End).				
Delair	Merchantville Water Co. (see Merchantville).				
Delanco	Delaware River Water Co. (see Beverly).				
Delaware	Delaware Water Co.	1900	One drilled well, 175 feet deep.		11,000
Deiford	Hackensack Water Co. (see New Milford).				
Demarest	Hackensack Water Co. (see New Milford).				
Dover	City of Dover.	1902	Five drilled wells, 200 feet deep; brook.		450,000
Dumont	Hackensack Water Co. (see New Milford).				
Dumellen	Watchung Water Co.	1897	Six drilled wells, 95 feet deep; one dug well.		225,000
East Newark	Montclair Water Co. (see Little Falls).				
East Orange	City of East Orange.	1882	Forty artesian wells, 120 to 260 feet deep.		3,250,000
East Rutherford	Hackensack Water Co. (see New Milford).				
East Summit	Commonwealth Water and Light Co. (see Milburn Township).				
Eatontown	Flintera Manor Water Co. (see Middletown Township).				
Edgewater	Hackensack Water Co. (see New Milford).				
Edgewater Park	Delaware River Water Co. (see Beverly).				
Egg Harbor City	Egg Harbor City Water Co.	1896	One drilled well, 400 feet deep; dug well, 30 feet deep.		150,000
Elberon	Flintera Manor Water Co. (see West End).				
Elizabeth	Elizabethtown Water Co.	1855	One hundred and five driven wells, 50 to 709 feet deep.		12,000,000
Elizabeth	Middlesex Water Co. (see Rahway).				
Elmer	Elmer Water Co.	1911	One driven well, 60 feet deep.		3,000,000
Emerson	Hackensack Water Co. (see New Milford).				
Eaglewood	Hackensack Water Co. (see New Milford).				
Eaglewood Cliffs	Hackensack Water Co. (see New Milford).				
Essex Fells	Essex Fells Electric Light and Water Co.	1893	Eight drilled wells, 50 feet deep.		150,000
Fairview	Hackensack Water Co. (see New Milford).				
Fanwood	Plainfield-Union Water Co. (see Netherwood).				
Flemington	Flemington Water Co.	1839	Raritan River, springs, drilled well, 405 feet deep, and mine bore.		200,000
Fort Lee	Hackensack Water Co. (see New Milford).				
Franklin Furnace	New Jersey Zinc Co.		Walkill River.		290,000
Freshold	Town of Freshold.	1890	Fifteen drilled wells, 90 feet deep.		400,000
Frenchtown	Frenchtown Water Co.	1910	Collecting gallery along Big Nektisawick Creek.		
Garfield	Borough of Garfield.	1906	Three drilled wells, 300 feet deep.		300,000
Garwood	Plainfield-Union Water Co. (see Netherwood).				
German Valley	German Valley Water Co.				
Gibbsboro	John Lucas & Co.		Springs.		
Gibbstown	E. I. du Pont de Nemours Powder Co.		One drilled well, 168 feet deep.		
Glassboro	Clayton-Glassboro Water Co. (see Clayton).		Dug well, 15 by 10 feet.	Small filter.	
Glen Gardner	Glen Gardner Water Co.	1893	Spring.		1,000
Glen Lake	Glen Lake Water Co.	1905	One drilled well, 250 feet deep.		
Glen Ridge	Note—Orange Water Co. buys all water from Montclair Water Co.				
Glen Rock	Hergen Water Co. (see Midland Park).				
Glocester	City of Glocester.	1883	Newton Creek, twenty-two drilled wells, 85 to 510 feet deep.	Four rapid-sand gravity type filters.	1,900,000
Grantwood	Hackensack Water Co. (see New Milford).				
Grassell	Elizabethtown Water Co. (see Elizabeth).				
Greenloch	Hasteman Manufacturing Co.	1908	One drilled well, 100 feet deep.		60,000
Guttenberg	Hackensack Water Co. (see New Milford).				
Hackensack	Hackensack Water Co. (see New Milford).	1898	Springs and surface flow.	Two small slow-sand filters.	
Hackettstown	Town of Hackettstown.	1910	Four drilled wells, 214 feet deep; spring.		110,000
Haddonfield	Haddonfield Water Co.	1889	Springs.		350,000
Haddonfield	Haddonfield Water Co. (see Haddonfield).				
Haddon Heights	Haddon Heights Water Co. (see Haddonfield).				
Haledon	Borough of Haledon.	1907	Spring-fed reservoir.		550,000
Hammononton	Town of Hammononton.	1902	Five drilled wells, 150 to 300 feet deep.		180,000
Hampton	Junction Water Co.	1818	Springs.		100,000
Hamor Township	Morris Aqueduct Co. (see Morristown).				
Harrison	Montclair Water Co. (see Little Falls).				
Hastbrook Heights	Hackensack Water Co. (see New Milford).				
Haworth	Hackensack Water Co. (see New Milford).				
Haworth	Henry C. Copeland.	1894	Drilled well, 185 feet deep.		8,000
Helmetta	American Sulfur Co.	1888	Two dug wells, 23 feet deep.		15,000
High Bridge	Borough of High Bridge.	1898	Springs.		
Highlands	Borough of Highlands.	1907	Two drilled wells, 213 to 257 feet deep.		100,000
Highland Park	City of New Brunswick (see New Brunswick).				
Hightstown	Hightstown Water Co.	1881	Four drilled wells, 200 feet deep.	Iron removal; aeration; lime added; one rapid-sand gravity filter.	150,000
Highwood	Hackensack Water Co. (see New Milford).				
Hilldale	Hackensack Water Co. (see New Milford).				
Hillside Manor	Hackensack Water Co. (see New Milford).				
Hilton	Commonwealth Water and Light Co. (see Milburn Township).				
Hoboken	Hackensack Water Co. (see New Milford).				
Hoboken	Hergen Water Co. (Midland Park).				
Holly Beach	Wildwood Water Co. (see Wildwood).				
Hopewell	Borough of Hopewell.	about 1890	Two drilled wells, 265 and 240 feet deep.		15,000
Horseneck	East Jersey Coast Water Co. (see Neptune Township).				

PUBLIC WATER SUPPLIES OF NEW JERSEY—Continued.

TOWN.	SUPPLIED BY	ESTABLISHED.	SOURCE.	TREATMENT.	APPROXIMATE DAILY CONSUMPTION IN GALLONS.
Irlington	Clinton Water Co. (see Milburn Township).				
Island Heights	Island Heights Water, Power, Gas and Sewer Co.	1901	Note—Clinton Water Co. buys water from Commonwealth Water and Light Co.		
Janesburg	Janesburg Water Co.	1909	Two drilled wells, 150 feet deep.		500,000
Jersey City	City of Jersey City.	1869	Two drilled wells, 75 feet deep.		240,083
Junction	Junction Water Co. (see Hampton).	1856	Rockaway River		75,000
Kearny	Mountair Water Co. (see Little Falls).			Sedimentation. Sterilization by chloride of lime.	50,000,000
Keasby	City of Perth Amboy (see Runyon).				
Kearlworth	New Orange Park Water, Heat, Light and Power Co.	1907	One drilled well, 275 feet deep.		
Keight	Town of Keight.	1882	Six drilled wells, 240 feet deep.	Iron removal; aeration; lime added; two rapid-sand gravity filters.	12,000 250,000
Kingsland	Hackensack Water Co. (see New Milford).				
Kirkwood	Lakeland Water Co.				
Lakehurst	Lakeland Sewer Co.	1911	One drilled well, 20 feet deep.		
Lakewood	Lakewood Water Co.	1945	One drilled well, 125 feet deep.		
Lambertville	Lambertville Water Co.	1836	Three drilled wells, 650 feet deep; three dug wells, 20 feet deep.		10,000
Laurel Springs	Laurel Springs Water Supply Co.	1877	Spring-fed reservoir.		20,000
Lawrenceville	James Hallish.	1907	Drilled wells, 100 to 115 feet deep.		300,000
Leonia	Hackensack Water Co. (see New Milford).		Two drilled wells, 25 and 62 feet deep.		100,000 10,000
Lincoln	Watchung Water Co. (see Dunellen).				
Linden	Elizabethtown Water Co. (see Elizabeth).				
Lindenwood	Haddonfield Water Co. (see Haddonfield).				
Litwood	Pleasantville Water Co. (see Pleasantville).				
Little Falls	Montclair Water Co.	1887	Passaic River		
Little Ferry	Hackensack Water Co. (see New Milford).			Thirty-two rapid-sand gravity filters. Disinfected by chloride of lime.	24,000,000
Little Silver	Titonia Manor Water Co. (see Middletown Township).				
Lodi	Stewart Beckel.		Spring.		
Lodi	Borough of Grandid (see Garfield).				
Lodi	Hackensack Water Co. (see New Milford).				
Loganville	East Jersey Coast Water Co. (see Neptune Township).				
Long Branch	Fernaux Water Co. (see Banking Bridge).				
Longport	Titonia Manor Water Co. (see West End).				
Lucaston	Borough of Longport.	1908	Two drilled wells, 822 feet deep.		
Lumberton	John Lucas Co. (see Gibbstown).				
Lynchburg	Lumberton Light, Water and Sewage Co.	1905	Banocoas Creek		125,000
Lyons Farms	Hackensack Water Co. (see New Milford).				
Madison	Elizabethtown Water Co. (see Elizabeth).				
Madison	Borough of Madison.	1889	Five drilled wells, 50 to 148 feet deep; one dug well, 20 feet deep.		10,000
Manasquan	Albert Winter.	1911	Spring		
Maple Shade	Borough of Manasquan.	1911	Two driven wells, 150 feet deep.		225,000
Maplewood	Maple Shade Water Co.	1893	One drilled well, 385 feet deep.		
Martinez	Commonwealth Water and Light Co. (see Milburn Township).				
Martinez	Louis D. F. Downer.	1888	Four drilled wells, 500 to 1,000 feet deep.		20,000
Margate City	Job Scott.	1895	Three drilled wells, 210 feet deep.		325,000
Marlton	Margate City Water Co. (see Jersey City).	1905	One drilled well, 110 feet deep.		12,000
Marlton	Marlton Water Co.	1905	One drilled well, 240 feet deep.		4,700
Mars Landing	Borough of Matawan.	1902	Three driven wells, 200 to 325 feet deep.		
Mars Landing	Mars Landing Water Power Co.	1907	Two drilled wells, 250 feet deep.	Aeration; two sand filters, 25 by 22½ feet by 8 feet deep.	70,000
Maywood	Lake Lenape.				50,000
Medford	Hackensack Water Co. (see New Milford).				
Medford	Medford Water Co.	1895	Haines Creek		
Merchantville	Borough of Medford.	1908	Seven drilled wells, 120 feet to 210 feet deep.		80,000
Medford	Merchantville Water Co.	1886		Iron removal; aeration; three pressure filters.	15,000 1,000,000
Middleton	Middlesex Water Co. (see South Plainfield).				
Middleton Township	August Ehrlich.		Drilled well, 175 feet deep.		
Milford	Jewell's Haines.		Drilled well, 228 feet deep.		
Milford	Titonia Manor Water Co.	1882	Hop Brook and Yellow Brook		1,500
Milford	Hackensack Water Co. (see New Milford).			Twelve rapid-sand gravity filters.	9,500,000
Milburn	Bergen Water Co.	1909	Four drilled wells, 200 to 200 feet deep.		
Milburn Township	Commonwealth Water and Light Co. (see Milburn Township).			Disinfection by chloride of lime.	600,000
Milford	Commonwealth Water and Light Co. (Cause Brook Plant).	1889	Twenty drilled wells, 90 to 155 feet deep.		50,000
Milington	Commonwealth Water and Light Co. (Cause Brook Plant).	1911	Dug well, 15 by 24 feet.		
Milville	Milington Water Co.	1900	One well, 25 feet deep.		
Milville	Milville Water Co.	1878	Tidon Lake		
Monmouth Beach	Peoples Water Co.	1905	Six drilled wells, 108 feet deep.	Four rapid-sand gravity filters.	12,000
Monmouth	Titonia Manor Water Co. (see Middletown Township).			Iron removal; aeration; one pressure filter.	950,000 700,000
Monmouth	Monmouth Water Co. (see Little Falls).				
Morris Plains	Monroevon Water Co.	1887	Penssion Creek, spring-fed pond.		
Morrisown	Proprietors of the Morris Aqueduct (see Morristown).			Two rapid-sand gravity filters.	
Morris	Proprietors of the Morris Aqueduct.	1759	Eight drilled wells, 45 to 60 feet deep; springs.		325,000
Morris	Proprietors of the Morris Aqueduct (see Morristown).				
Morris	Proprietors of the Morris Aqueduct (see Morristown).				
Morris	Hackensack Water Co. (see New Milford).				
Morris	Hillcrest Water Co.	1911	Drilled well, 240 feet deep.		650,000
Mount Holly	Mr. Holly Water Co.	1845	Banocoas Creek		
Mount Holly	Farm Meeting Association.	1902	Two wells, 20 feet deep; two springs.	Three rapid-sand gravity filters.	
Mount Holly	Harrison Heights Improvement Co.		Two drilled wells, 258 and 291 feet deep.		862,000
Mount Holly	National Park Improvement Co.		Drilled well, 86 feet deep.		20,000
Mount Holly	Community supply.		Spring		2,000

PUBLIC WATER SUPPLIES OF NEW JERSEY—Continued.

TOWN.	SUPPLIED BY	ESTABLISHED	SOURCE.	TREATMENT.	APPROXIMATE DAILY CONSUMPTION IN GALLONS.
Sea Bright	Tipton Manor Water Co.				
Sea Girt	Sea Girt Water Co.	1895	One well, 20 feet deep.		
Sea Isle City	Sea Isle City Water Co.	1896	One drilled well, 863 feet deep.		10,000-30,000
Seaside Park	Borough of Seaside Park.	1907	Two drilled wells, 178 and 507 feet deep.		50,000-300,000
Secaucus	Hackensack Water Co. (see New Milford).				15,000
Sewaren	Middlesex Water Co. (see South Plainfield).				
Sewell	Sewell Water Co.				
Short Hills	Short Hills Water Co.	1911	One drilled well, 440 feet deep.		
Shrewsbury Township	Tipton Manor Water Co.	1899	Thirteen drilled wells, 40 to 80 feet deep.		282,000
Spartanville	H. B. Smith Machine Co.				
Somersale	Haddon Heights Land Improvement Co.	1965	Two drilled wells, 110 feet deep.	Iron removal; aeration; one small rapid-sand gravity filter.	20,000
Somers Point	Pleasantville Water Co. (see Pleasantville).		One drilled well, 110 feet deep.		
Somerville	Somerville Water Co. (see Hazlet).				
South Amboy	City of Perth Amboy (see Runyon).				
South Cape May	City of Cape May (see Cape May).				
South Orange Township	Commonwealth Water and Light Co. (see Milburn Township).				
South Orange Village	Commonwealth Water and Light Co.				
South Plainfield	Middlesex Water Co.		Thirteen drilled wells, 250 feet deep; pond.	Pond water filtered; one rapid-sand gravity filter.	50,000 400,000 1,250,000
South River	Borough of South River.				
Sparta	Short Hills Water Co. (see Short Hills).		Mountain stream and springs.		
Springfield	Short Hills Water Co. (see Short Hills).				
Spring Lake	Borough of Spring Lake.	1906	Seven artesian wells, 800 feet deep.		
Stirling	Stirling Water Supply Co.	1905	Five drilled wells, 85 to 248 feet deep.		180,000-1,300,000
Stockton	Borough of Stockton. (see New Milford).	1907	Two drilled wells, 160 feet deep.		
Stone Harbor	Stone Harbor Water Co.	1909	One drilled well, 339 feet deep.		25,000
Stratford	Laurel Springs Water Co. (see Laurel Springs).				6,000-40,000
Summit	Commonwealth Water and Light Co. (Green Brook Plant).	1859	Two dug wells, 30 and 20 feet; three drilled wells, 200 feet deep.		
Surf City	Surf City Water Co.	1907	One drilled well, 508 feet deep.		
Sussex	Borough of Sussex.	1894	Lake Rutherford.		
Swedesboro	Woodrick Water Co. (see New Milford).	1901	Three drilled wells, 132 feet deep.		100,000 80,000
Teaneck	Hackensack Water Co. (see New Milford).				
Tenafly	Hackensack Water Co. (see New Milford).				
Ton's River	Hackensack Water Co. (see New Milford).				
Trenton	City of Trenton.	1897	Three drilled wells, 39 feet deep.		
Tuckerton	Tuckerton Water Co.	1829	Delaware River.		80,000
Union, Bergen County	Hackensack Water Co. (see New Milford).	1896	Stream issuing from Cedar Swamp.		18,000,000
Union, Union County	Elizabethwater Water Co. (see Elizabeth).				50,000
Yentzer	City of Yentzer.				
Verona	Essex Falls Electric Light and Water Co. (see Essex Falls).	1908	Two drilled wells, 825 feet deep.		25,000
Vincetown	Vincetown Water Co.				
Violetdale	Borough of Violetdale.	1900	Raccoon Creek.		55,000
Wallington	Borough of Wallington.	1903	Twelve drilled wells, 120 feet deep.		600,000
Warren Paper Mills	Warren Manufacturing Co.	1871	Spring; two drilled wells, 202 feet deep.		140,000
Washington	Washington Water Co.	1881	Stream.	Sand filter.	
Wanamassa	East Jersey Coast Water Co. (see Neptune Township).				
Watchkill	Hackensack Water Co. (see New Milford).				35,000
Wesnoah	Wesnoah Water Co.				200,000
West Allenhurst	East Jersey Coast Water Co. (see Neptune Township).	1886	Six drilled wells, 96 to 128 feet deep.		39,000
West Avon	East Jersey Coast Water Co. (see Neptune Township).				
West Cape May	City of Cape May (see Cape May City).				
West End	Tipton Manor Water Co.	1882	Whale Pond Brook.	Ten pressure filters.	3,000,000
Westfield	Plainfield-Union Water Co. (see Northwood).				
West Hoboken	Hackensack Water Co. (see New Milford).				
Westmont	Merchantville Water Co. (see Merchantville).				
West New York	Hackensack Water Co. (see New Milford).				
West Orange	Montclair Water Co. (see Little Falls).				
Westville	Westville-Newbold Water Co.	1897	Two drilled wells, 150 feet deep.		
Westwood	Hackensack Water Co. (see New Milford).				
Wharton	Borough of Wharton.	1910	Mine Spring.		50,000
Wildwood	East Jersey Coast Water Co. (see Neptune Township).				
Wildwood Crest	Wildwood Water Works Co. (see Wildwood).	1894	One drilled well, 800 feet deep; nine drilled wells, 350 feet deep.		20,000 330,000
Willistown	Monroe Water Co.	1902	Three drilled wells, 112 to 124 feet deep.		30,000
Woodbine	Woodbine Land and Improvement Co.	1896	Five drilled wells, 150 feet deep.		130,000
Woodbridge	Middlesex Water Co. (see South Plainfield).				
Woodbridge Township	City of Perth Amboy (see Runyon).				
Woodbury	City of Woodbury.	1886	Mantua Creek.		600,000
Woodbury Heights	City of Woodbury (see Woodbury).				
Woodlawn	Merchantville Water Co. (see Merchantville).				
Woodridge	Hackensack Water Co. (see New Milford).				
Woodstown	City of Woodstown.	1802	Six drilled wells, 155 feet deep.		
Wortendike	Bergen Water Co. (see Miller Park).				
Wrightstown	Wrightstown Water, Electric Light and Sewer Co.	1899	One dug well, 24 by 12 feet.		90,000
Wyoming	Commonwealth Water and Light Co. (see Milburn Township).				10,000 50,000

Report on the Water Purification Plants in Operation in New Jersey, October 31st, 1911.

H. P. LETTON, C.E., *Field Assistant.*

Mr. F. E. Daniels, Chief, Division of Sewerage and Water Supplies, Board of Health of the State of New Jersey, Trenton, New Jersey:

DEAR SIR—I beg to submit the following brief report on twenty-three of the rapid sand filtration plants in the State of New Jersey. The data for this report was obtained on personal inspections made during September and October, 1911.

The majority of the plants are in good shape and are well managed, laboratories for bacteriological work being maintained in five cases. There are a few plants, however, which are in disreputable condition. This is due, in most cases, to inefficient and incapable men being in charge of the plant and to the lack of any supervision on the part of either the municipal or company officials.

Seven of the plants described are for the purpose of removing iron from ground water, and they are in every case very efficient.

Of the plants filtering surface water, five use calcium hypochlorite in connection with the filters. Its use has been found to be economical by causing a saving in the necessary amount of alum to reduce the bacterial count. This is clearly shown in the table accompanying the description of the filters at Little Falls.

Considering the generally unscientific management of most of the plants, it would be well from a sanitary viewpoint, at least, to use hypochlorite in connection with every plant filtering a polluted water.

ALLENTOWN.—This is a borough supply established in 1896. The supply is obtained from a pond or reservoir which is fed by several springs, and, in time of rains, by surface water. The pond has an area of perhaps 10 acres, and is quite full of pond lilies, grass and other water plants. The supply has every chance of pollution as the drainage from a number of houses and barns and outhouses flows directly into the water not far from the intake.

From the reservoir, the water flows by gravity to a rapid sand filter, 9 feet in diameter, and equipped with mechanical rakes or agitators. The filter is washed once daily with filtered water. It is judged that the average daily consumption is about 12,000 gallons. As the filter is only run about four hours daily, the rate of filtration is approximately 50,000,000 gallons per acre per day.

A small amount of alum is used and run directly into the filter, but the amount is not determined exactly, and it is not always used. The engineer stated that they were planning on adding an extra tank so that soda-ash could be added when the alkalinity was low.

From the filter the water runs to a filtered water cistern beneath the filter. There is a crack about 2 inches wide between the filter and the floor where dirt can get into the filtered water.

There has been considerable trouble at times on account of microscopic organisms which were not removed by the filter.

Analyses of the raw and filtered water show that in some cases the filtered water is worse chemically than the raw water. It may be that the filtered water reservoir needs cleaning.

To put this plant in good order either a settling basin should be constructed or the rate of filtering should be greatly reduced and an efficient alum dosing box arranged.

In regard to the pollution of the water, practically all the drainage from the houses, &c., could be eliminated by building a dike to divert this water and empty it into the ravine below the plant.

This supply is in a dangerous condition as it is evident that the filter is not efficient and that there is always the possibility of dangerous pollution.

Since the above was written, the borough authorities have taken steps toward complying with the recommendations for putting the plant in proper shape.

ASBURY PARK.—There are two plants here, one owned by the City of Asbury Park, and one by the East Jersey Water Company.

The municipal supply was established in 1885, and the filters are used for removing iron.

The supply is obtained from seven artesian wells, from 4 to 10 inches in diameter, and from 600 to 1,100 feet depth. The water is pumped by the air lift process to an open concrete reservoir about 45 feet square and 11 feet deep. The air causes the iron in the water to precipitate as an oxide and this gives the water a deep red color.

From the reservoir the water is pumped through two pressure filters. These filters each consist of two units, each unit being about 25 feet long and 6 feet in diameter. The first contains sand as a filtering material and the second, charred bone. Each unit of each filter is washed once daily, the washing of a complete filter requiring from 25,000 to 40,000 gallons. The washing is done by a reverse current of filtered water and a current of compressed air being applied simultaneously.

The average daily consumption is 600,000 gallons.

This plant is in good shape and produces a safe and potable water.

The East Jersey Coast Water Company's plant is located about four miles west of Asbury Park, on the New York road.

The supply is obtained from Jumping brook, which is impounded into a small reservoir. Much trouble has been had with grass and other aquatic plants in the reservoir, but a good attempt is made to keep them out.

From the reservoir the water flows by gravity to an open, rectangular, wooden coagulating tank, 48 feet long, 24 feet wide and 5 feet deep. Before the water enters this tank there is added to it soda-ash and aluminum sulphate, each in the proportion of about one and one-quarter grains per gallon. The soda-ash is added before the alum. The coagulating tank is so baffled that the water flows the length of the tank four times and the coagulation is perfect. This tank is cleaned every three months, about a foot of sediment being removed each time.

From the coagulating tank the water flows by gravity to an open settling basin with paved earthen slopes. At the water surface the length is about 175 feet, the width 100 feet and the depth 8 feet. This basin is cleaned twice every year, about one foot of sediment being removed each time.

From the settling basin the water flows by gravity to a suction well 8 feet in diameter and 12 feet in depth. A flowing artesian well also empties in to this well.

The water is pumped from the suction well through two pressure filters, each having a rated capacity of 500,000 gallons per day. The filters are washed once per day, the average amount of wash water being 33,000 gallons for each filter. This is almost 10 per cent. of the average daily consumption, which is 700,000 gallons.

A laboratory is maintained and the following tests are made:

Total count on agar at 20° C. on raw, settled and filtered water, twice per week. Lactose bile presumptive tests for *B. coli* every other day on raw, settled and filtered water, using 1 c.c. Tests are also made for color and alkalinity. The following average figures show the excellent results being obtained and especial attention is called to the effect of coagulation.

	<i>B. coli</i>			
	Total count at 20°.	percentage of + tubes.	Color.	Alkalinity.
Raw water.....	95	50	40	0
Settled water.....	15	..	..	8
Filtered water.....	2	0	0	10

The increase in alkalinity of the filtered water over the settled is due to the artesian well water which has a high alkalinity.

The plant is well managed and is obtaining the best results, without the use of bleach, of any plant in the State.

ATLANTIC HIGHLANDS.—This is a municipal plant, established in 1892, for removing iron from the water.

The supply is obtained from eight wells, from 110 feet to 450 feet in depth. The water is pumped by the air lift process into a collecting well. From here it is pumped through two pressure filters, each with a rated capacity of 250,000 gallons per day. The filters are washed every other day.

The average daily consumption is about 150,000 gallons.

This plant is producing a safe and potable water.

BURLINGTON.—This is a municipal plant established in 1804.

The supply is derived from the Delaware river and is pumped with centrifugal pumps to a baffled coagulating basin. This basin is built of concrete, being 47 feet long, 33 feet wide and 11.5 feet deep, with a storage capacity of 210,000 gallons. As the water enters here, it is dosed with sulphate of alumina in quantities from one-quarter to three-quarters of a grain per gallon, and with calcium hypochlorite in the proportion of about 0.4 parts available chlorine per 1,000,000 gallons.

From the coagulating basin the water flows by gravity to four rapid sand filters, each 14 feet 9 inches by 18 feet 3 inches, and having an area of 269.2 square feet. Each filter has a rated capacity of 750,000 gallons per 24 hours. The filters are washed once per day with filtered water, the sand being first agitated with compressed air.

From the filters the water enters a concrete basin having a capacity of about 200,000 gallons, from which it is pumped into the distribution system.

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The average daily consumption is about 850,000 gallons.

A laboratory is maintained in which chemical tests are made. The plant is kept in good shape and is well managed.

GLoucester.—The plant is municipally owned and was constructed in 1883. As originally designed, the supply was obtained from artesian wells but, as the consumption increased, some water was taken from Newton creek, which flows near the station. At the present time most of the wells are out of commission and the larger portion of the supply is obtained from the creek.

The filtration plant consists of two settling or coagulating basins, which are wooden tanks 22 feet in diameter and 12.5 feet high, with a total capacity of about 71,300 gallons. It was planned to dose the entering water with sulphate of alumina and this was done until recently. At the present time the mixing tanks are out of commission and a small amount of alum is added directly to the water entering the filters.

The filters consist of four circular wooden tanks 15 feet in diameter. The filters are operated at a rate of 120,000,000 gallons per acre per day. Each filter is washed about every six hours with filtered water, during which time the sand is agitated with a revolving rake. Although the beds had been washed just before the inspection the sand was full of muddy matter.

From the filters the water flows into an open concrete lined reservoir of, perhaps, 500,000 gallons capacity. From here it is pumped into the distribution system.

At times water is pumped into the settling basins faster than it is taken away by the filters and the overflow is turned into the filtered water reservoir.

Analyses of the water show that *B. coli* is always present and this is to be expected since the creek is polluted with sewage.

The plant should be put in working order by replacing the alum tanks with new ones and by using a sufficient amount of alum to get proper sedimentation; very little is obtained at present. Considering the polluted source, it would be well if a hypochlorite plant was also added.

Since the above was written, the borough authorities have taken steps to remedy conditions.

HIGHTSTOWN.—This is a municipal supply established in 1885.

The supply is obtained from four artesian wells, 6 inches in diameter and 206 feet deep. This water contains considerable iron, and it is necessary to remove this by filtering.

The water is pumped to a wooden tank where a small amount of lime is added, after which it is aerated by falling through a screen. From here part of the water enters the filter directly and part flows over another screen on to the surface of the filter.

The filter is a rectangular wooden tank about 6 feet by 12 feet, and is washed by an upward flow of filtered water. The filter is washed once per day.

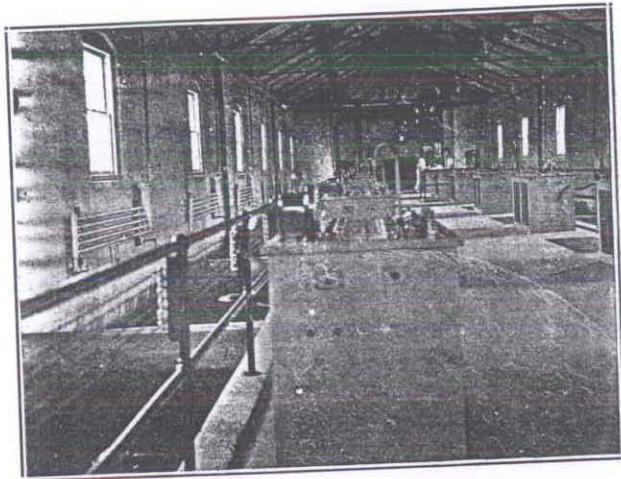
The average daily consumption is about 150,000 gallons.

The filter is very efficient, samples of the filtered water showing no iron.

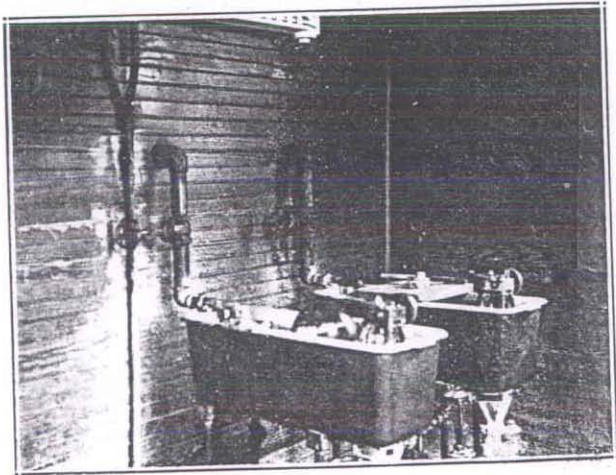
KEYPORT.—This is a municipal plant established in 1892.

The supply is obtained from six 4-inch wells, 240 feet deep. The average daily consumption is about 250,000 gallons.

Water is pumped to a wooden settling basin having a capacity of 20,000 gallons. As the water enters the basin it is dosed with lime in the proportion of about four grains per gallon, and is aerated with compressed air. The settling tank is cleaned every three months.



LITTLE FALLS: One Filter Gallery.



LITTLE FALLS: Hypochlorite Dosing Apparatus.

From the settling basin the water flows by gravity to two rapid sand filters 12 feet in diameter. These filters are of the Warren type and are washed every eight hours, the sand being agitated mechanically. About 10 per cent. of the total water filtered is used for washing.

This plant is very efficient in removing iron, and analyses show that the water is a safe and potable one.

LITTLE FALLS.—The plant here, owned by the Montclair Water Company, and constructed in 1902, is the largest in the State. It was fully described, together with its method of operation, by Mr. George W. Fuller, in the Proceedings of the American Society of Civil Engineers, of February, 1903, but a brief description is given below.

The plant is located on the north bank of the Passaic river just below the falls. The supply is obtained from the river above the falls, and delivered to the plant through a canal and a 66-inch steel pipe.

The inlet pipe discharges into a circular concrete tank where the water is treated with sulphate of alumina in quantities necessary to reduce the color below 10. Thorough mixing is obtained by means of the natural agitation of the water and it then passes to the coagulating basin. This basin is built of concrete and has a capacity of about 1,750,000 gallons. Every two months the accumulated sediment, amounting to about 2,000 tons, is cleaned out by pumping it into the river.

From the coagulating basin the water flows by gravity to 32 rapid sand filters. The filters are built of concrete, rectangular in shape, being 24 feet long and 15 feet wide, with a filtering surface area of 360 square feet. The normal rate of operation of each bed is 1,000,000 gallons per day. The rate of filtration is governed by Weston Controllers. The filters are operated by hydraulic cylinders. On each table is a loss of head gauge and the filter is washed when this loss is 9.0 feet. In washing, the sand is first agitated by air being forced through the strainer system for three minutes, followed by a current of filtered water for six minutes. The air is furnished by Sturtevant blowers and the wash water by special pumps. All the machinery is electrically driven.

Beneath the filters is located the clear water well. As the water leaves the clear water well, it is dosed with calcium hypochlorite in the proportion of about 0.2 parts available chlorine per 1,000,000 gallons.

Every eight hours, tests are made on raw, coagulated, filtered and delivered water for turbidity, color and bacteria at 20° C., and on raw and delivered water for alkalinity, and the alum and hypochlorite solutions are tested for strength. Presumptive B. coli tests in dextrose broth are made once per day on river, filtered and delivered water. Complete chemical analyses are made once per month. Once per week, microscopical analyses are made on water in all reservoirs.

This plant besides being the largest in the State is also the best managed, being run on strictly scientific principles. The following table gives the yearly results since the plant has been in operation:

YEAR.	Average Period of Service.		FIL. WATER MILL GALS. PER DAY.		Per Cent. of Wash Water.	SULPHATE OF ALUMINA.		PARTS PER MILLION.				BACTERIA PER C.C.			
			Total.	Net.		Lbs. per Day.	Gr. per Gallon.	ALKAL.		TURBIDITY.		COLOR.		Raw.	Filtered.
								Raw.	Filtered.	Raw.	Filtered.	Raw.	Filtered.		
1902-3.....	9.55	12.8	12.4	3.5	2,330	1.28	28	19	11	1	35	6	3,500	70	
1903-4.....	10.55	17.2	16.7	2.8	3,060	1.26	29	21	18	0	44	6	2,600	55	
1904-5.....	10.89	23.0	22.4	2.6	4,150	1.28	38	24	12	0	29	5	1,500	50	
1905-6.....	10.52	22.1	21.4	3.2	4,720	1.49	37	16	2	0	32	4	2,500	110	
1906-7.....	9.29	24.5	23.6	3.8	4,340	1.24	30	22	9	0	25	3	2,000	65	
1907-8.....	10.23	24.7	23.8	3.6	4,940	1.41	24	14	9	0	31	3	1,300	35	
1908-9.....	10.33	24.2	23.4	3.9	4,930	1.44	32	22	9	0	28	3	2,300	48	
1909-10.....	10.41	26.8	26.0	3.7	7,740	2.03	32	21	10	0	40	5	5,300	100	
1910-11.....	11.37	28.0	27.3	3.9	4,530	1.12	31	24	11	0	45	8	4,450	16	

Bleach has only been used during the past year and its result can be clearly seen from the above table.

Mr. F. W. Green is the superintendent in charge of pumping and filtration.

LONG BRANCH.—There are two plants supplying Long Branch and the neighboring communities, and both are owned by the Tintern Manor Water Company. One is located in West End and one near Red Bank.

The first supply is obtained from Whale Pond brook, which is dammed to form a small reservoir.

The water flows by gravity to a suction well, where, in times of high turbidity, some alum is added. From the suction well the water is pumped to ten pressure rapid sand filters, of which eight are vertical, having a rated capacity of 500,000 gallons per day each, and two are horizontal, having a rated capacity of 250,000 gallons per day each. Before entering the filters, the water is dosed with sulphate of alumina, by means of a shunt feed apparatus, in the proportion of from one-quarter to one grain per gallon, the average amount being three-quarters of a grain. The filters are washed normally every twelve hours with a reverse current of filtered water.

The average daily consumption for this plant is about 3,000,000 gallons.

The second supply is obtained by damming the waters of Hop brook and Yellow brook a short distance below their confluence. A portion of this reservoir near the dam is made into a settling basin by means of a tight timber wall, and as the water enters this it is dosed with a small amount of sulphate of alumina, thus reducing the turbidity to a considerable extent. The water from here enters a 36-inch cast-iron pipe and flows by gravity to the filter plant, which is located about a mile west of Red Bank.

As the water enters the filter-house, it is dosed with sulphate of alumina in quantities varying from 0.4 to 2.0 grains per gallon, averaging about one grain per gallon. The water is then raised by centrifugal pumps to twelve rapid sand filters. Each filter is 17 feet in diameter, being built of wood and of the sectional wash type, having a rated capacity of 1,000,000 gallons. The filters are washed from three to four times daily with filtered water.

Beneath the filters is located the filtered water basin, which is built of concrete and is 6 feet in depth. The capacity of this must be about 300,000 gallons. There is no tight cover over this basin, and it is possible for dirt to get in; however, the filter building is in good shape, and the platforms are kept clean, so it is not probable that there would enter any polluting matter.

The average daily consumption from this plant is about 9,500,000 gallons. During the winter months, the West End plant is sufficient to supply the demand.

Both plants seem to be in fair condition and the company is undoubtedly making an effort to supply a pure and wholesome water to its consumers.

MERCHANTVILLE.—The plant is owned by the Merchantville Water Company and was established in 1886. It is located east of Pensauken and near the creek of the same name.

The supply is obtained from seven wells from 120 to 210 feet in depth. The water is pumped to an aerating tower, which consists of a series of seven screens covered with coke and arranged one above another. From here, the water flows by gravity to a covered settling tank of 80,000 gallons capacity.

From the settling tank it is pumped through three rapid sand filters of the pressure type, each having a rated capacity of 500,000 gallons. These filters remove practically all the iron, which has been precipitated by the aeration. The filters are washed on an average of every two days; the time of washing is about ten minutes.

The average daily consumption is about 1,000,000 gallons.

This plant is well managed and produces a water of the highest quality, free from any possible danger of pollution.

MILLVILLE.—There are two water companies here, one supplying a well water, and the other a surface water.

People's Water Company.—This supply is obtained from six artesian wells 112 feet deep. The water contains iron which it is necessary to remove.

From the wells, the water flows by gravity to a collecting or suction well 12 feet in diameter and 38 feet in depth. Compressed air is forced through the water in the well to precipitate the iron.

From the suction well, the water is pumped through a rapid sand filter of the horizontal pressure type. The filter is washed with a reverse current of filtered water every other day.

The average daily consumption is 700,000 gallons.

The plant is well kept up and the water is free from any danger of pollution.

Millville Water Company.—This company obtains its supply from Union lake. The water has a very high color from some cedar swamps above. It is also polluted by the surface wash from numerous privies and barns.

The water flows to a rectangular settling basin and from there to four rapid sand filters 15 feet in diameter. Alum is added to the water as it enters the settling basin in the proportion of one-eighth of a grain per gallon. At the time of inspection, the alum pumps were out of order and were not being used.

In washing the filters, a reverse current of water only is used. A water motor for furnishing power for the agitators is in place, but is not used. The filters are operated at a rate of about 60,000,000 gallons per acre per day.

During the past summer, on account of low water and at the time of the inspection, some unfiltered water was pumped to the mains, due to trouble with the pumps.

At the present time, the filters are removing very little color. New sand has been added to two of the units and it is planned to change the others also.

The engineer of the plant has no thorough understanding of the principles underlying the process of mechanical filters and for this reason, the plant is in very bad shape.

Since the above was written, the company has taken steps toward having the plant put into proper shape.

MOORESTOWN.—This plant is owned by the Moorestown Water Company, and was established in 1887. The plant is situated about a mile west of West Moorestown. The supply is obtained from Pensauken creek and from a small reservoir fed by springs.

The water flows from the creek or pond to a collecting well and is pumped from here to settling tanks having a capacity of 75,000 gallons. Alum in the proportion of 0.28 grains per gallon, and soda-ash in the proportion of 0.20 grains per gallon are added to the water in the collecting well. The settling tanks are cleaned about twice a month, although very little sediment collects.

From the settling basins, the water flows to two rapid sand filters about 15 feet in diameter. The filters are operated at a rate of about 105,000,000 gallons per acre per day, and are washed once daily with filtered water, while the sand is being agitated by mechanical rakes. From the filters, the water enters a filtered water basin built of concrete beneath the floor of the filter house.

Analyses of the water show that *B. coli* is generally present, although no source of pollution is evident. This is probably due to the fact that the right proportions of alum and soda-ash are not being added and that they are not added at the correct place. They should be added to the suction line from the collecting well to the settling basins. There has been complaint that the alum is causing the pipes to corrode and this is probably due to incorrect dosing.

The plant is well kept up and should be capable of giving much better results than it does.

MOUNT HOLLY.—This is a private supply owned by the Mount Holly Water Company and established in 1845. The supply is obtained from Rancocas creek, which is a stream highly colored and sewage polluted.

The water flows by gravity from the creek through a screen chamber into a collecting basin or suction well. Here sulphate of alumina is added in quantities varying from 0.6 to 1 grain per gallon. The alum is mixed in two wooden tubs and flows through a regulating box to the well.

From the suction well, the water is pumped to two cylindrical wooden tanks 24 feet in diameter and 20 feet deep, with a capacity of 135,000 gallons. These tanks are cleaned every month, there being about a foot of sediment collecting in that time.

The water flows from the top of the settling tanks by gravity to three rapid sand filters. The filters are all 15 feet in diameter, and two of them are of the New York Sectional Wash type, while the other is a Roberts. The filters are washed on an average of once per day with filtered water.

From the filters, the water enters a filtered water basin beneath the floor, having a capacity of 43,000 gallons.

The water is pumped from the filtered water basin to two reservoirs located on a hill some distance above the town. These reservoirs have a storage capacity of about 1,400,000 gallons, and are cleaned every May and November.

Tanks for dosing the water with calcium hypochlorite are in place, but they have never been used.

The average daily consumption for 1910 was 362,000 gallons.

This plant is very well managed and the filters are quite efficient. Although *B. coli* is always present in the creek water, it has only been found once in the filtered water during the past year. A good purification is also shown by the chemical analyses.

NEW MILFORD.—This is a private system owned by the Hackensack Water Company and established in 1882. It is next to the largest plant in the State, supplying about 45 towns and cities. The supply is taken from the Hackensack river, the average daily consumption being about 23,000,000 gallons.

The water is pumped to a concrete sedimentation basin, where it is dosed with alum to the extent of about 1.3 grains per gallon, after which it has a two-hour period of sedimentation. After leaving the sedimentation basin, the water is treated with calcium hypochlorite in the proportion of from six to nine pounds per 1,000,000 gallons, or from 0.25 to 0.36 parts available chlorine per 1,000,000 gallons, and then is pumped to eight rapid sand filters of the gravity air wash type. These filters are 27 feet by 56 feet in plan, and have a filtering area of about 1,000 square feet. The normal capacity of each filter is 3,000,000 gallons per day, but it can be subjected to an overload of 33 per cent. without seriously injuring the efficiency.

The filters are washed every eight hours, regardless of loss of head. In washing, the sand is first agitated by air for three minutes, and then a current of filtered water is forced through the strainer until the waste water is clean. The water used for washing is from 2½ to 3 per cent. of the total water filtered.

After filtering, the water enters a clear water basin having a capacity of 1,000,000 gallons, and from here it is pumped into the distribution system.

This plant is exceptionally well managed. A complete chemical and bacteriological laboratory is maintained, and the following tests are made: Total counts at 20° C. every eight hours on filtered and unfiltered water. Lactose bile *B. coli* presumptive tests once daily on unfiltered, sedimentated and filtered water, using a 5 c.c. portion. Once a week, samples are taken from the district offices and from the reservoirs at various points on the distribution system, and the same tests are made on these. Every two weeks, complete chemical and bacteriological analyses are made on the filtered and unfiltered waters. Once per month, complete analyses are made by the Lederle Laboratories, of New York City.

The results obtained by the plant are excellent. While about 50 per cent. of the samples of unfiltered water show the presence of *B. coli* in 5 c.c., it is not found in the filtered and treated water. The total count in the filtered and treated water will not average over 15 c.c. for the whole year.

PENNSGROVE.—The Pennsgrove Water Supply Company, established in 1905, takes its supply from four driven wells, about 165 feet in depth. The water contains a large amount of iron and to remove this, mechanical treatment is in use. The water is pumped up through a 6-inch pipe and discharges on to two screens covered with coke, the screens being placed one above the other so that the flow is broken up and the water is well aërated. From here, it flows into a concrete basin and is retained for eight hours, during which time a large proportion of the iron settles out. From the sedimentation basin, the water flows by gravity to a circular sand filter, 13 feet in diameter, where any unprecipitated iron is removed. The filtered water reservoir of concrete is located just beneath the filter.

Provision has been made for adding alum, but we are informed by the company that this additional treatment is unnecessary in producing a clear effluent.

RAHWAY.—There are two plants located here, one municipally owned, which supplies Rahway, and one owned by the Middlesex Water Company, which supplies a number of towns in the vicinity.

Municipal plant.—The supply is obtained from the Rahway river. The water flows by gravity from the river through a series of five screens into a suction well. From here it is pumped to a steel standpipe, entering about 25 feet above the bottom. Alum is added in the suction line in the proportion of 0.25 to 2.0 grains per gallon. The sediment accumulating in the standpipe amounts to about 9,000 gallons every two days, when it is flushed out.

Water is taken from the standpipe at a point 40 feet above the bottom and flows to eight horizontal rapid sand pressure filters, each 8 feet by 25 feet, and with a capacity of 500,000 gallons. The filters are washed once per day, using about 160,000 gallons, which is 6 per cent. of all water filtered. The water for washing is obtained from a concrete reservoir having a capacity of 185,000 gallons, which is filled with filtered water during the night. The pressure for washing is obtained by pumping the water with a centrifugal pump driven by a steam turbine.

In times of high turbidity in the river water, calcium hypochlorite is added in the proportion of 1.7 parts available chlorine per 1,000,000 gallons.

The operation of the filter is under the control of Professor E. B. Phelps, of New York City, and the superintendent of the plant, Mr. D. V. Gage, makes daily bacteriological tests of the water before and after filtration.

This is one of the few plants in the State which is scientifically managed, and its value is clearly shown by the efficiency of the filters, *B. coli* being found very rarely in the effluent.

Middlesex Water Company.—The plant is situated on the Robinson Branch of the Rahway river, which feeds the reservoir from which the supply is obtained. This reservoir has a capacity of about 260,000,000 gallons.

The water flows by gravity to a suction well where it is dosed with alum in the proportion of about 1.5 grains per gallon.

From the suction well it is forced through 12 rapid sand pressure filters, each 8 feet by 20 feet in plan, and having a rated capacity of 500,000 gallons per day. The filters are washed from once in 24 hours to once in 36 hours, using from 10 to 12 per cent. of the filtered water for washing.

The average daily consumption is 4,000,000 gallons.

A laboratory is maintained for microscopical analyses, as there has been considerable trouble at times from organisms in the reservoir. *Asterionella* has caused the most trouble and has been removed by using copper sulphate in the reservoir. A laboratory for doing bacteriological work is being equipped.

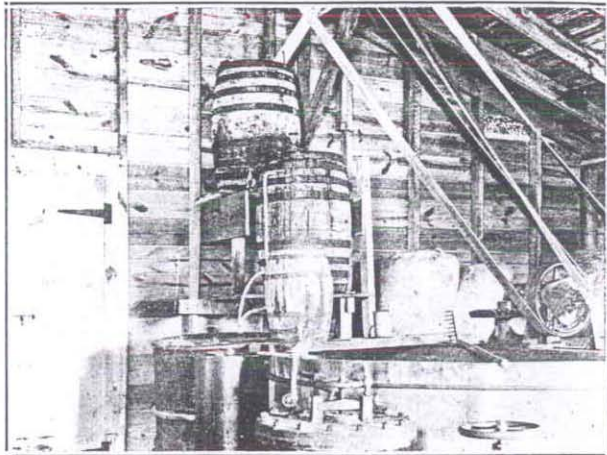
This plant is very well managed and produces safe water.

RARITAN.—This is a private plant owned by the Somerville Water Company and established in 1881. The supply is obtained from the Raritan river, the water being pumped to a standpipe having a capacity of about 300,000 gallons. Before the water enters the standpipe, it is dosed with sulphate of alumina in the proportion of about one grain per gallon. The method by which the amount is regulated is not a scientific one, the filter attendant simply guessing at the amount according to the turbidity of the raw water. The accumulated sediment in the standpipe is flushed out weekly.

The water flows from the standpipe, at a point 80 feet above the bottom, to seven rapid sand filters of the pressure type. Four of these filters are known as the Hyatt Filter. These are the only ones of this kind in the State, and are of a very old type. In washing, all the sand is ejected from the filter by means of a water jet, and is then allowed to run back by gravity. It takes about one-half hour to wash each filter. Each of these filters has a rated capacity of 1,000,000 gallons per day. The remaining three filters are of the ordinary horizontal type, each having a rated capacity of 500,000 gallons per day. All of the filters are washed on an average of once per day.

The average daily consumption is 1,000,000 gallons per day.

The plant seems to be fairly well managed and to give results better than would be expected, considering the manner in which the alum dosing is regulated. Some more scientific method should be adopted in order to put the plant in first-class shape.



SKILLMAN: Emergency Hypochlorite Plant.



NEW BRUNSWICK: Emergency Hypochlorite Plant.

ROEHLING.—The plant, which was constructed in 1905, is owned by the John A. Roebling's Sons Company, and is located in one of the mill buildings of this company.

Water is pumped from the Delaware river to a standpipe, and from there it flows by gravity to the coagulating basin.

The settling basin has a capacity of 35,400 gallons. The water entering this basin is treated with sulphate of alumina in the proportion of 1.1 grains per gallon, which is the maximum amount that can be used without overcoming the alkalinity in the raw water. An attempt has also been made to treat the incoming water with calcium hypochlorite, but on account of the difficulty of regulating the small amount needed, its use has been practically discontinued.

From the coagulating basin, the settled water flows by gravity to the filters. The filters are almost square in plan, each has an area of 63.7 square feet, or a total filtering area of 200 square feet. They are filtering about 130,000 gallons per 24 hours, or at a rate of 29,000,000 gallons per acre per day, which is a very low rate for this type of filter. The filters are washed about every six hours, and this is done by forcing filtered water upward through the bottom strainers, and, at the same time, forcing compressed air up through the sand from a separate set of pipes placed just above the strainers.

Some years ago there was a typhoid fever epidemic in Roebling, and the water-supply was suspected. Soon after this, a Forbes Sterilizer was purchased and a small amount of the filtered water is now sterilized and delivered in a tank wagon to the inhabitants, and a large amount is put in large bottles and cooled for drinking in the mills.

About 60 per cent. of the population use the plain filtered water for drinking.

A sample of the filtered water was taken and tested for *B. coli*. This showed it to be present in 0.1 c.c. and from previous samples *B. coli* is found to be present in quantities ranging from 0.1 to 10.0 c.c. From this it is evident that the filter is not efficient in removing bacteria, although all color and turbidity are removed.

To put this plant in a safe condition, the hypochlorite plant should be remodeled and the bleach should be used continuously. It is possible that better results would occur if the bleach was added as the water leaves the settling basin instead of as it enters.

This plant is capable of giving much better results than have been obtained, and steps should be taken to have it properly managed.

SKILLMAN.—This plant is owned by the State and supplies water for the New Jersey State Village for Epileptics.

The supply is obtained from a small brook which has been impounded into a reservoir. Water is pumped from the reservoir to three large wooden settling tanks, each holding 25,000 gallons. As the water enters the tank, it is dosed with aluminum sulphate in the proportion of 1.5 grains per gallon by means of an alum feed pump, which works in synchronism with the raw water pump.

From the settling tanks, the water flows by gravity to a rapid sand filter, 8 feet in diameter, and with a rated capacity of 144,000 gallons per day. The filter is washed once daily with filtered water, the sand being agitated mechanically during the process.

From the filters, the water enters a concrete clear water basin, having a capacity of 54,800 gallons, and from here is pumped into the distribution system.

SMITHVILLE.—The plant is owned by the H. B. Smith Machine Company, and is located in the mill-yard of the company. The supply is obtained from

two wells 6 inches in diameter and 110 feet deep. This water is high in iron, which it is necessary to remove before using.

The water is pumped from the wells to an iron tank holding about 2,500 gallons. As the water enters this tank, it is broken up into a number of fine streams and is well aerated.

From the aerating tank the water flows by gravity to a Greer rapid sand filter about 6 feet in diameter. This filter is washed once daily by a reverse stream of filtered water.

From the filter, the water is pumped to an elevated tank and from there flows into the distribution system.

The average daily consumption is about 20,000 gallons.

This plant is a small one, and while located in rather a cramped and dirty place, it seems to turn out a water that is free from any pollution and that is quite potable.

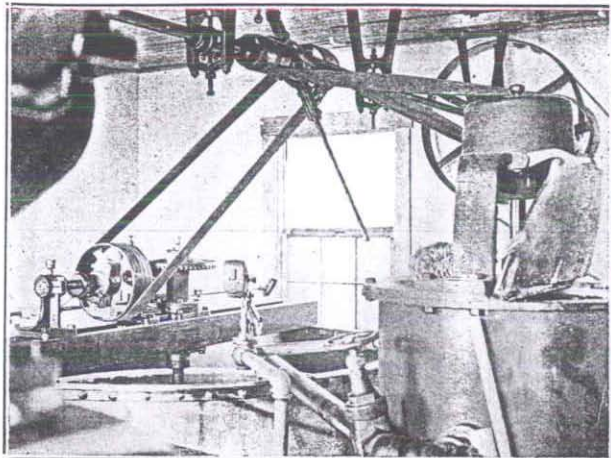
SOUTH PLAINFIELD.—This plant is owned by the Middlesex Water Company and was established in 1896. The supply is obtained from 13 wells, 250 feet deep and from a large pond.

The average daily consumption is about 1,250,000 gallons.

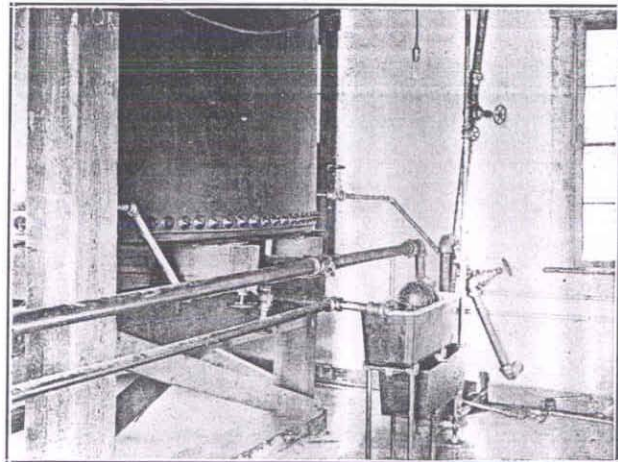
During the summer months, it is necessary to use about 250,000 gallons per day of the pond water. This is filtered through a rapid sand filter, 13 feet in diameter, and of the sectional wash type. The water before being filtered is dosed with sulphate of alumina in the proportion of 2.5 grains per gallon. After filtering, the water flows to the suction line from the wells and is mixed with the well water.

At the time of the inspection, no filtered water was being used, but it was used during the summer, and analyses showed *B. coli* to be always present.

A hypochlorite plant should be installed to augment the work of the filter.



TRENTON: Hypochlorite Plant—Solution Apparatus.



TRENTON: Hypochlorite Plant—Dosing Apparatus.

CONTINUOUS RECORD OF ANALYSES OF WATER FROM THE PUBLIC SUPPLIES OF NEW JERSEY—RESULTS IN PARTS PER MILLION EXCEPT WHERE OTHERWISE STATED.

TOWN.	DATE.	SOURCE OF SAMPLE.	Color.	Olor, Cold.	Olor, Hot.	Turbidity.	Total Solids.	Loss on Ignition.	Mineral Residue.	Appearance on Ignition.	NITROGEN AS						Iron.	Bacteria per cc. 20° C.	Bacteria per cc. 37° C.	Red Colonies per cc. 37° C.	B. Coll.	
											Free Ammonia.	Atomized Ammonia.	Nitrites.	Nitrates.	Chloride.	Alkalinity.						Hardness, Total.
Allenhurst	Nov. 30, 1910	Artesian well	0	0	0	25	189	15	124	No charring.	.052	.036	.001	.00	3.0	73.0		.6			Absent.	
	Feb. 15, 1911	Tap; driven well, filtered.	0	0	0	0	137	25	98		.008	.012	.000	.00	2.0	75.0		.0			Absent.	
	Feb. 15, 1911	Tap; driven well, unfiltered.	0	0	0	0	142	26	118		.044	.012	.004	.00	2.5	74.0		.9			In 10.0 cc.	
	May 27, 1911	Tap; driven well, unfiltered.	0	0	0	0	125	29	90		.066	.034	.005	.00	2.0	83.0	85.7	1.1			In 10.0 cc.	
	May 28, 1911	Tap; driven well, filtered.	0	0	0	0	131	40	91		.008	.032	.000	.00	3.0	71.0	75.7				Absent.	
Allentown	Aug. 16, 1911	Tap; filtered water.	0	0	0	0	190	30	100		.004	.000	.000	.00	2.0	73.0		.6			Absent.	
	Aug. 19, 1911	Tap; raw water.	0	0	0	0	130	20	90		.020	.018	.017	.00	3.0	71.0		.0			Absent.	
	Jan. 9, 1911	Tap; filtered water.	63	2-v	2-v	35	70	38	32		.070	.120	.004	.92	5.5	5.0		1.8			In 1.0 cc.	
	Jan. 9, 1911	Tap; unfiltered water.	35	2-v	2-v	35	65	27	33		.012	.022	.002	.68	5.5	3.0		.6			In 1.0 cc.	
	Apr. 25, 1911	Tap; filtered water.	50	1-v	2-v	35	66	27	37		.056	.120	.000	1.20	5.5	2.0	18.2	1.6			In 10.0 cc.	
" "	Apr. 25, 1911	Brook; raw water.	35	0	0	0	25	64	29	35	.036	.140	.000	1.20	5.5	3.0		.9			In 1.0 cc.	
	July 19, 1911	Tap; raw water.	125	2-v	2-v	30	82	47	45		.080	.025	.000	6.5	13.0		5.0				In 1.0 cc.	
	July 19, 1911	Tap; filtered water.	50	1-v	2-v	30	54	21	33		.044	.134	.000	3.8	5.5	14.0	15.0	15.0			In 1.0 cc.	
	Oct. 4, 1911	Tap	0	0	0	0	25	80	14	80		.068	.130	.002	1.20	5.5	13.0		2.0			Absent.
	Oct. 4, 1911	Pond; near intake.	0	0	0	0	30	96	16	80		.068	.130	.002	1.20	5.5	13.0		2.0			Absent.
Anglesea	Feb. 22, 1911	Tap	0	0	0	0	525	108	417		**	.026	.016	.08	192.0	120.0		.3			Absent.	
	May 17, 1911	Tap	0	0	0	0	560	144	416		||	.043	.020	.00	193.0	130.0	130.0	.4			In 10.0 cc.	
	Aug. 7, 1911	Tap	0	0	0	0	339	55	23	Slight darkening.	.118	.030	.070	.00	102.5	114.0		.4			Absent.	
Asbury Park	Nov. 10, 1910	Tap; East Jersey Coast Water Co.	0	0	0	0	135	23	132		.016	.056	.000	.12	16.5	25.0		.2			Absent.	
	Feb. 14, 1911	Tap; East Jersey Coast Water Co.	5	1-e	1-e	0	94	29	65		.016	.030	.000	.08	10.0	20.0	26.0	.3			Absent.	
	Feb. 14, 1911	Tap; East Jersey Coast Water Co.	5	1-e	1-e	0	94	29	65		.016	.030	.000	.08	10.0	20.0	26.0	.3			Absent.	
" "	Feb. 14, 1911	Tap; artesian supply	0	0	0	0	80	17	73		.008	.012	.003	.00	2.0	47.0	45.7	.0			Absent.	
	May 26, 1911	Tap; East Jersey Coast Water Co.	0	0	0	0	86	17	73		.004	.024	.000	.12	9.5	15.0	26.0	.2			Absent.	
	May 26, 1911	Tap; artesian supply	0	0	0	0	87	13	72		.008	.016	.000	.00	4.0	47.0	52.0	.0			Absent.	
	Aug. 5, 1911	Tap; artesian supply	0	0	0	0	87	13	72		.008	.016	.000	.00	2.0	43.0		.0			Absent.	
	Aug. 5, 1911	Tap; East Jersey Coast Water Co.	0	0	0	0	87	13	72		.018	.042	.002	.12	4.0	70.0		.0			In 1.0 cc.	
Atlantic City	Dec. 15, 1910	Tap	0	0	0	0	28	16	22	No change.	.006	.018	.000	.00	7.0	.0		.0			Absent.	
	Jan. 17, 1911	Tap	30	2-v	2-v	0	34	9	25		.008	.082	.000	.00	6.5	1.0		.3			In 1.0 cc.	
	Apr. 13, 1911	Tap	40	2-e	2-e	0	34	9	25		.004	.052	.000	.00	6.5	.0		.3			In 10.0 cc.	
	July 7, 1911	Tap	29	1-v	1-v	0	78	15	63		.012	.064	.000	.04	7.0	9.0	19.5	.3			In 1.0 cc.	
	July 10, 1911	Tap	25	1-v	2-v	0	78	15	63		.014	.080	.000	.16	7.5			.3			In 10.0 cc.	
" "	Oct. 11, 1911	Tap	40	2-v	2-v	0	47	12	35		.008	.056	.000	.00	7.5	.0		.4			In 10.0 cc.	
	Dec. 30, 1910	Tap; borough supply	0	0	0	0	35	63	19	44		.008	.016	.000	.00	4.0	20.0		1.2			Absent.
	Feb. 11, 1911	Tap	0	0	0	0	59	7	52		.000	.066	.000	.00	5.5	20.0	42.9	.0			Absent.	
	May 31, 1911	Tap; filtered water	0	2-v	2-v	0	75	47	28		.030	.026	.001	.00	3.5	31.0	33.8	.1			Absent.	
	May 31, 1911	Unfiltered water	0	2-v	2-v	0	200	69	34	35		.062	.034	.002	.00	3.5	26.0	42.9	7.0			In 10.0 cc.
" "	Aug. 16, 1911	Tap; filtered water	0	0	0	0	72	22	50		.024	.072	.003	.00	3.5	33.0		.7			Absent.	
	Aug. 16, 1911	Well; unfiltered water	1	1-e	1-e	0	250	77	13	94		.024	.072	.003	.00	3.5	33.0		.7			Absent.
	Feb. 21, 1911	Tap	0	0	0	0	189	38	154		.008	.016	.000	.00	31.5	82.0		.0			Absent.	
	May 17, 1911	Tap	0	0	0	0	196	44	155		.030	.078	.002	.00	33.0	85.0	63.5	.1			Absent.	
	Aug. 7, 1911	Tap	0	0	0	0	188				.174	.030	.007	.00	32.0	83.0		.0			Absent.	
Barnegat	Dec. 20, 1910	Driven well, 152 feet by 8 inches.	0	0	0	0	40	12	28		.000	.000	.000	.00	7.5	.0		.0			Absent.	
	Jan. 19, 1911	Tap	0	0	0	0	41	16	25		.000	.018	.000	.00	6.5	.0		.0			Absent.	
	Apr. 22, 1911	Tap	0	0	0	0	35	25	10		.004	.014	.000	.00	7.5	.0	9.5	.1			Absent.	
	July 19, 1911	Tap	0	0	0	0	51	37	14		.006	.020	.000	.00	6.5	8.0		.3			Absent.	
	Oct. 6, 1911	Tap	0	2-e	2-e	0	39	15	41		.016	.046	.001	.00	6.0	.0		.3			In 10.0 cc.	
Bartley	Feb. 7, 1911	Spring	0	0	0	0	33	17	16		.026	.028	.002	.24	2.5	13.0	14.3	.0			Absent.	
	May 9, 1911	Tap	0	0	0	0	150	135	15		.004	.022	.000	.20	3.0	18.0	22.1	.0			Absent.	
	Aug. 28, 1911	Tap	0	0	0	0	53	20	35		.008	.034	.000	.28	3.0	23.0		1.0			Absent.	
Basking Ridge	June 12, 1911	Osborne's Lake	0	1-v	2-v	0	90	143	80		.042	.070	.003	.20	3.0	16.0		1.3			In 0.1 cc.	
	Aug. 12, 1911	Tap	25	1	2	0	80				.140	.002	.00	5.0				.3			In 10.0 cc.	
Bay Head	Jan. 11, 1911	Tap	0	0	0	0	135	30	96		.042	.022	.000	.24	2.0	92.0		.4			Absent.	
	Apr. 27, 1911	Tap	0	0	0	0	165	66	99		.022	.054	.000	.04	2.0	88.0	84.5	.0			Absent.	
	Oct. 5, 1911	Tap	0	0	0	0	25	13	12		.000	.039	.000	.00	2.0	93.0		.0			In 10.0 cc.	
Beach Haven	Nov. 7, 1910	Driven wells, 575 feet by 6 inches.	0	0	0	0	25	68	12	56	No change.	.022	.012	.000	.00	2.5	11.0		1.2			Absent.
	Jan. 18, 1911	Tap	0	0	0	0	74	9	65		.032	.044	.000	.08	4.0	18.0		.6			Absent.	
" "	Apr. 21, 1911	Tap	0	0	0	0	56	20	30		.000	.018	.000	.00	4.5	14.0	19.5	.6			Absent.	
	July 18, 1911	Tap	0	0	0	0	61	23	30		.000	.018	.000	.00	5.0	20.0	15.6	1.8			Absent.	
	Oct. 6, 1911	Tap	0	0	0	0	82	12	60		.010	.016	.000	.00	5.0	24.0		.4			Absent.	
	Jan. 18, 1911	Driven well, 360 feet.	0	0	0	0	63	8	35		.026	.008	.000	.00	4.5	3.0		.9			Absent.	
	Apr. 21, 1911	Tap at iron stand-pipe.	0	0	0	0	74	36	38		.000	.018	.000	.00	5.0	3.0	6.3	1.8			Absent.	
Belmar	July 18, 1911	Tap at stand-pipe.	0	0	0	0	70	23	47		.038	.026	.000	.00	2.5	13.0	7.9	3.0			Absent.	
	Feb. 14, 1911	Tap	0	0	0	0	120	23	91		.008	.008	.004	.00	2.5	74.0	78.0	.1			Absent.	
	Mar. 26, 1911	Tap	0	0	0	0	114	13	101		.018	.024	.000	.00	2.0	74.0	67.0	.6			Absent.	
	Aug. 12, 1911	Tap	0	2-e	2-e	0	118	20	98		.050	.016	.000	.00	1.0	15.0		.8			Absent.	
Belvidere	Nov. 16, 1910	Tap	15	1-e	2-e	0	49															

CONTINUOUS RECORD OF ANALYSES OF WATER FROM THE PUBLIC SUPPLIES OF NEW JERSEY—RESULTS IN PARTS PER MILLION EXCEPT WHERE OTHERWISE STATED—Continued.

TOWN.	DATE.	SOURCE OF SAMPLE.	Color.	Obr. Cuhl.	Obr. Hot.	Turbidity.	Total Solids.	Loss on Ignition.	Mineral Residue.	Appearance on Ignition.	NITROGEN AS					Chlorine.	Alkalinity.	Hardness, Total.	Iron.	Bacteria per cc. 20° C.	Bacteria per cc. 37° C.	Total Colonies per cc. 37° C.	B. Coli.	
											Free Ammonia.	Albuminoid Ammonia.	Nitrates.	Nitrites.	Nitrogen.									
Belvidere	Nov. 30, 1910.	Reservoir	0	0	0	0	52	14	38	No change.	.012	.032	.000	.18	1.5	17.0							Absent.	
	Mar. 1, 1911.	Tap: Belvidere Water Co.	0	1-v	1-v	0	53	23	29		.006	.070	.000	.08	2.0	16.0							In 10.0 cc.	
	Mar. 1, 1911.	Tap: Buck Horn Springs Water Co.	0	0	0	0	43	20	23		.044	.044	.000	.12	2.5	10.0							Absent.	
	Mar. 1, 1911.	Tap: Buck Horn Water Co.	0	1-v	2-v	0	40	25	15		.013	.056	.001	.16	2.5	16.0								In 10.0 cc.
	June 6, 1911.	Tap	0	0	0	40	71	49	29		.018	.154	.000	.12	1.0	18.0		26.0		1.2				Absent.
Bernardsville	Sept. 19, 1911.	Tap: Delaware River water.	0	2-e	0	0	50	15	35		.016	.090	.000	.00	2.5	23.0								In 1.0 cc.
	Sept. 19, 1911.	Tap: Buck Horn supply.	0	2-e	0	0	58	14	30		.018	.050	.000	.28	3.0	16.0								In 0.1 cc.
	Nov. 19, 1910.	Tap	0	0	0	0	69	20	48	No change.	.008	.033	.000	1.00	2.5	21.0								Absent.
	Mar. 7, 1911.	Tap	0	0	0	0	69	21	48		.008	.054	.000	.32	3.5	20.0		50.0		.3				Absent.
	June 12, 1911.	Tap	0	1-v	1-v	80	90	37	63		.046	.196	.001	.28	3.5	20.0		24.7		5.0				In 0.1 cc.
Beverly	June 12, 1911.	Tap	0	2-v	3-v	60	107	63	44		.044	.210	.001	.20	3.5	14.0								In 0.1 cc.
	July 12, 1911.	Tap	0	0	0	300	87	87		.018	.330	.000	.16	3.0										In 1.0 cc.
	Aug. 7, 1911.	Tap	0	0	0	0	69	21	48		.008	.004	.000	.00		43.0							Absent.	
	Sept. 22, 1911.	Tap	0	2-e	0	0	60	18	42		.044	.094	.000	.12	5.0	34.0								Absent.
	Jan. 4, 1911.	Tap	0	1-e	2-e	0	103	42	63		.012	.012	.000	4.18	15.0	6.0								Absent.
Blackwood	Apr. 18, 1911.	Tap	0	0	0	0	150	63	84		.020	.026	.002	4.00	16.0	11.0		26.0		.2				Absent.
	Apr. 24, 1911.	Tap	0	2-e	3-e	0	122	62	80		.004	.014	.000	2.80	12.5	11.0								Absent.
	Oct. 2, 1911.	Tap	0	0	0	0	55	19	36		.032	.000	.000	4.00	15.0	9.0								In 1.0 cc.
	Feb. 23, 1911.	Tap	25	0	0	0	55	19	36		.072	.074	.008	4.0	4.5	13.0								In 10.0 cc.
	May 23, 1911.	Tap	00	1-v	1-v	0	65	53	12		.140	.110	.017	.00	4.0	21.0		23.4		.5				In 10.0 cc.
Blairstown	Aug. 3, 1911.	Tap	50	3-e	0	0	279	56	223		.178	.164	.020	.00	4.5	13.0								In 10.0 cc.
	Mar. 2, 1911.	Tap	0	1-v	1-v	0	287	138	149		.054	.038	.001	.00	4.5	190.0								Absent.
	June 8, 1911.	Tap	0	2-e	0	0	253	28	225		.036	.056	.001	.00	6.0	182.0								Absent.
	Sept. 19, 1911.	Tap	0	1-e	1-e	0	53	16	39		.056	.024	.003	.90	6.0	194.0								Absent.
	Mar. 1, 1911.	Tap	0	1-e	1-e	0	53	16	39		.008	.028	.001	.64	3.0	13.0								Absent.
Bloomsbury	June 21, 1911.	Tap	0	2-e	2-e	*	85	45	40		.010	.022	.000	1.00	4.0	30.0								In 0.1 cc.
	Sept. 15, 1911.	Tap	0	0	0	0	0	0	0		.016	.038	.000	1.12	4.5	31.0								In 0.1 cc.
	Nov. 19, 1910.	Tap: East Jersey Water Co.	0	0	0	0	258	69	169		.016	.030	.000	.80	5.5	30.0								Absent.
	Jan. 9, 1911.	Tap	0	0	0	0	101	49	52		.010	.024	.000	1.80	8.5	96.0								Absent.
	Apr. 4, 1911.	Tap	5	1-v	1-v	0	101	49	52		.012	.086	.000	.04	5.0	12.0		40.3		.3				Absent.
Boonton	July 25, 1911.	Tap	0	1-e	1-e	0	227	20	207		.010	.024	.000	.80	11.0	73.0								Absent.
	Oct. 19, 1911.	Tap	29	2-v	2-v	*	41	21	20		.014	.066	.000	1.40	9.0	76.0								Absent.
	Mar. 6, 1911.	Tap	5	1-v	1-v	0	50	9	41		.010	.074	.003	.12	3.5	15.0		16.9		.4				In 0.1 cc.
	June 9, 1911.	Tap	0	0	0	0	50	9	41		.026	.126	.000	.08	4.5	9.0		16.9		1.0				Absent.
	Sept. 22, 1911.	Tap	0	1-e	0	0	44	17	27		.020	.094	.000	.00	3.5	13.0								Absent.
Bordertown	Nov. 16, 1910.	Tap	0	0	0	0	54	14	30		.010	.010	.004	2.80	3.5	7.0								Absent.
	Jan. 4, 1911.	Tap	0	0	0	0	46	24	30		.012	.012	.000	2.20	5.0	2.0								Absent.
	Apr. 18, 1911.	Tap	0	0	0	0	40	16	30		.022	.028	.000	2.40	4.5	3.0		7.9		2.5				Absent.
	Oct. 2, 1911.	Tap	0	0	0	0	40	16	30		.026	.044	.000	2.40	55.0	3.0								Absent.
	Jan. 3, 1911.	Tap	0	†	†	120	492	88	404		.008	.018	.000	.56	15.3									Absent.
Bound Brook	Apr. 4, 1911.	Tap	0	0	0	15	77	48	29		.010	.046	.001	.12	5.0	21.0								In 10.0 cc.
	June 28, 1911.	Tap	0	1-v	1-v	0	102	51	51		.016	.060	.000	.04	5.0	51.0		61.4		.5				In 1.0 cc.
	July 13, 1911.	Tap	0	†	†	0	368	78	290		.006	.072	.000	.00	12.0	71.0		145.3		1.0				In 0.1 cc.
	July 15, 1911.	Tap	0	0	0	0	0	0	0		.026	.040	.000	.40	12.0	40.0								In 0.1 cc.
	July 15, 1911.	Tap	0	0	0	0	0	0	0		.026	.068	.000	.40	15.0									In 0.1 cc.
Branchville	Oct. 3, 1911.	Tap	0	2-e	0	0	481	49	432		.004	.020	.000	.28	14.5	88.0								In 10.0 cc.
	Oct. 23, 1911.	Tap	0	0	0	0	493	55	438		.010	.038	.001	.80	15.0	86.0		215.0		.0				In 0.1 cc.
	Oct. 23, 1911.	East Branch reservoir.	50	1-e	0	40	100	30	70		.038	.130	.001	.28	4.0	15.0		45.7		.9				In 0.1 cc.
	Oct. 23, 1911.	West Branch reservoir.	25	2-e	0	33	90	30	70		.028	.096	.001	.00	4.0	14.0		39.0		1.4				Absent.
	Mar. 8, 1911.	Tap	33	1-m	1-m	*	50	25	25		.020	.112	.000	.00	1.5	12.0		24.7		.3				Absent.
Brant Beach	June 8, 1911.	Tap	60	2-v	2-v	0	58	26	22		.066	.230	.002	.00	1.5	19.0		23.4		.7				In 1.0 cc.
	July 19, 1911.	Tap	0	0	0	0	123	18	72		.038	.022	.000	.00	5.0	14.0		11.1		4.0				Absent.
	Oct. 7, 1911.	Tap	0	0	0	30	123	23	110		.046	.064	.000	.00	5.0	28.0								Absent.
	Jan. 27, 1911.	Tap	0	0	0	0	62	23	39		.088	.064	.000	.96	9.5	5.0								Absent.
	Apr. 22, 1911.	Tap	0	1-v	2-v	0	70	22	48		.001	.80	.000	.00	9.5	5.0		19.5		.7				Absent.
Brown's Mills	July 3, 1911.	Tap	0	1-e	1-e	*	70	30	40		.064	.018	.000	1.80	10.0	8.0								Absent.
	Oct. 10, 1911.	Tap	30	0	0	0	115	25	90	No charring.	.268	.008	.002	.00	3.0	86.0								Absent.
	Dec. 2, 1910.	Driven well, 480 feet deep.	0	0	0	0	104	17	87		.200	.038	.000	.00	3.0	88.0		82.9		.0				Absent.
	Mar. 18, 1911.	Tap: artesian wells	0	0	0	0	120	51	69		.350	.032	.000	.00	3.5	80.0								Absent.
	June 27, 1911.	Tap	0	1-v	1-v	0	120	51	69		.350	.032	.000	.00	3.5	80.0								Absent.
Burlington	Sept. 13, 1911.	Tap	0	0	0	0	112	35	77		.038	.000	.000	3.5	84.0									In 0.1 cc.
	Nov. 16, 1910.	Water works: partial sedimentation.	33	2-e	3-e	25	112	29	77	Slight darkening.	.004	.040	.040	25.0										

CONTINUOUS RECORD OF ANALYSES OF WATER FROM THE PUBLIC SUPPLIES OF NEW JERSEY—RESULTS IN PARTS PER MILLION EXCEPT WHERE OTHERWISE STATED—Continued.

Table with columns: TOWN, DATE, SOURCE OF SAMPLE, Color, Odor, Odor, Turbidity, Total Solids, Loss on Ignition, Mineral Residue, Appearance on Ignition, Nitrogen as (Free Ammonia, Albuminoid Ammonia, Nitrites, Nitrates), Chlorine, Alkalinity, Hardness, Total, Iron, Bacteria per cc. at 20° C., Bacteria per cc. at 37° C., Total Coliforms per cc. at 37° C., B. Coll.

* Slight. † Kerosene. ‡ Too high. § Prec.

CONTINUOUS RECORD OF ANALYSES OF WATER FROM THE PUBLIC SUPPLIES OF NEW JERSEY—RESULTS IN PARTS PER MILLION EXCEPT WHERE OTHERWISE STATED—Continued.

TOWN.	DATE.	SOURCE OF SAMPLE.	Color.	Obr. Cond.	Obr. Hct.	Turbidity.	Total Solids.	Loss on Ignition.	Mineral Residue.	Appearance on Ignition.	NITROGEN AS					Alkalinity.	Hardness, Total.	Iron.	Bacteria per cc. 20° C.	Bacteria per cc. 37° C.	Red Colones per cc. 37° C.	B. Coll.	
											Free Ammonia.	Albuminoid Ammonia.	Nitrites.	Nitrates.	Chlorine.								
Crosswicks	Nov. 9, 1910.	Driven well, 175 feet by 6 inches.	15	1-e	2-e	120	176	17	132	Slight darkening.	.084	.016	.000	.00	1.3	104.0		1.5					
"	Feb. 15, 1911.	New well, 220 feet.	0	0	0	150	181	34	147		.040	.022	.000	.32	3.5	70.0		0.2				In 10.0 cc.	
"	Feb. 17, 1911.	Artesian well, 220 feet by 6 inches.	0	0	0	100	150	25	123		.060	.000	.000	.06	3.5	76.0		0.3				Absent.	
"	Apr. 24, 1911.	New well, 220 feet by 6 inches.	30	2-e	2-e	200	154	20	134		.090	.004	.000	.00	3.5	67.0		0.5				In 10.0 cc.	
"	Apr. 24, 1911.	Spring No. 4.	0	0	0	0	75	43	32		.018	.080	.002	3.20	8.0		0					In 10.0 cc.	
"	Apr. 24, 1911.	Spring No. 3.	0	1-v	1-v	0	61	25	36		.000	.048	.000	.40	4.0		0					Absent.	
"	Apr. 24, 1911.	Spring No. 2.	0	0	0	0	46	28	18		.018	.088	.000	1.00	4.0		0					Absent.	
"	Apr. 24, 1911.	Spring No. 1.	5	0	0	0	46	32	14		.012	.060	.000	.40	4.5		0					Absent.	
"	Apr. 24, 1911.	Springs 1, 2, 3 and 4, equal parts.	0	2-e	3-v	0	62	34	8		.000	.044	.002	1.00	5.5		0					In 10.0 cc.	
"	Aug. 28, 1911.	Reservoir.	0	1-e	0	0	98	39	68		.020	.048	.001	3.20	6.0		3.0					In 0.1 cc.	
Deal	Nov. 5, 1910.	Driven well, 583 feet by 8 inches.	0	0	0	0	151	20	131	No change.	.016	.016	.013	.00	5.5	101.0		5				Absent.	
Deal Beach	Aug. 16, 1911.	Tap	0	0	0	0	155	25	130		.044	.020	.003	.00	7.5	101.0		5				Absent.	
"	Feb. 15, 1911.	Tap at wells.	0	0	0	0	151	33	118		.042	.036	.000	.00	6.5	108.0		8				Absent.	
"	May 28, 1911.	Tap at plant.	0	0	0	0	156	32	144		.072	.036	.001	.00	7.5	103.0		8				In 10.0 cc.	
Delawanna	Nov. 2, 1910.	Driven well, 250 feet by 2½ inches.	0	0	0	0	152	42	110	No change.	.012	.012	.000	1.20	4.0	76.0		0				Absent.	
"	Jan. 9, 1911.	Tap	0	0	0	0	149	52	97		.000	.008	.000	1.32	6.0	61.0		0				Absent.	
"	Apr. 8, 1911.	Tap	0	1-e	1-e	0	243	148	95		.018	.028	.000	2.20	6.0	76.0		0				Absent.	
"	July 29, 1911.	Tap	0	0	0	0	149	48	101		.018	.036	.000	2.40	5.5	73.0		0				Absent.	
"	Oct. 18, 1911.	Tap	0	0	0	0	170	18	152		.018	.036	.000	2.40	5.5	71.0		0				Absent.	
"	Nov. 1, 1910.	Tap	5	1-v	2-v	0	138	34	104	Slight darkening.	.040	.044	.010	.00	4.5	57.0		2				Absent.	
"	Nov. 1, 1910.	Tap	5	1-e	2-e	0	228	36	192	No change.	.004	.012	.000	.52	4.5	92.0		0				Absent.	
"	Feb. 3, 1911.	Tap	35	1-e	2-e	0	61	23	38		.040	.120	.002	.60	4.5	12.0		0				Absent.	
"	Mar. 9, 1911.	Tap; driven wells.	0	2-e	2-e	0	197	27	170		.000	.000	.000	.40	4.5	96.0		0				In 0.1 cc.	
"	Mar. 9, 1911.	Tap; springs in swamp.	0	0	0	0	65	32	33		.040	.064	.005	.56	3.5	13.0		0				Absent.	
"	May 6, 1911.	Tap	0	0	0	0	88	23	35		.000	.000	.000	.52	3.5	16.0		0				In 10.0 cc.	
"	June 22, 1911.	Tap	15	†	†	45					.020	.090	.000	.36	3.5							In 1.0 cc.	
"	June 22, 1911.	Tap; driven wells.	0	0	0	0					.018	.026	.000	.24	5.0							In 1.0 cc.	
"	July 25, 1911.	Filtered water.	10	0	0	0					.022	.104	.000	.00	3.5							In 1.0 cc.	
"	July 25, 1911.	Catch basin from springs.	0	0	0	0					.050	.000	.000	.00	3.5							In 0.1 cc.	
"	July 25, 1911.	Unfiltered water.	20	†	†	0					.054	.110	.000	.16	3.5							In 0.1 cc.	
"	July 25, 1911.	Reservoir, driven wells.	0	1-e	1-e	0					.004	.014	.000	.12	5.5							In 0.1 cc.	
"	Aug. 22, 1911.	Driven wells.	0	0	0	0					.010	.038	.000	.20	5.5							Absent.	
"	Aug. 22, 1911.	Lower reservoir.	0	0	0	0					.020	.032	.000	.20	5.5							Absent.	
"	Aug. 22, 1911.	Driven well, 100 feet.	0	0	0	0					.014	.032	.000	1.00	2.5							In 1.0 cc.	
"	Aug. 24, 1911.	Tap	0	0	0	0	235	25	210		.014	.040	.000	.32	6.5	98.0		3				Absent.	
Dunellen	Dec. 7, 1910.	Tap	0	0	0	0	158	23	135	No change.	.000	.008	.002	.40	8.5	79.0		0				Absent.	
"	Jan. 6, 1911.	Tap	0	0	0	0	146	25	121		.000	.028	.000	.60	9.0	55.0		0				Absent.	
"	Apr. 4, 1911.	Tap	0	1-e	1-e	0	172	58	114		.000	.008	.001	1.20	9.5	66.0		0				In 10.0 cc.	
"	July 25, 1911.	Tap	0	1-e	1-e	0	135	21	114		.000	.018	.000	.60	11.0	61.0		0				Absent.	
"	Aug. 4, 1911.	Dug well, 22 feet.	0	†	†	25					.124	.112	.000	.12	8.5							In 0.1 cc.	
"	Aug. 10, 1911.	Dug well, 14 feet by 12 inches.	0	0	0	0	104				.008	.018	.000	.48	11.0	40.0		0				Absent.	
"	Aug. 10, 1911.	Pressure reservoir.	0	0	0	0	171				.012	.042	.002	.44	11.0	72.0		0				In 0.1 cc.	
"	Aug. 10, 1911.	Tap	0	0	0	0	159				.004	.018	.000	.40	10.5	72.0		0				In 10.0 cc.	
"	Aug. 10, 1911.	Tap in pumping station, six driven wells.	0	0	0	0	226				.016	.030	.000	.54	9.5	103.0		1.2				Absent.	
"	Oct. 3, 1911.	Tap	0	2-e	0	0	122	40	82		.014	.050	.000	.80	9.0	58.0		1				Absent.	
East Newark	Oct. 9, 1911.	Tap	0	0	0	0					.018	.080	.000	.12	5.5							In 1.0 cc.	
East Orange	Dec. 8, 1910.	Tap	0	0	0	0	172	24	148	No change.	.004	.024	.000	.48	5.5							Absent.	
"	Jan. 27, 1911.	Tap	0	0	0	0	183	49	134		.036	.042	.000	.48	5.5	88.0		0				Absent.	
"	Apr. 11, 1911.	Tap	0	0	0	0	218	61	137		.004	.018	.000	.48	5.5	83.0		0				Absent.	
"	June 28, 1911.	Tap	0	0	0	0	176	130	46		.000	.006	.000	.60	6.0	86.0		0				In 10.0 cc.	
"	July 18, 1911.	Tap	0	1-e	1-e	0	100	42	148		.012	.028	.000	.80	5.5	88.0		0				In 10.0 cc.	
"	Nov. 20, 1911.	Tap	0	1-e	0	0	178	22	156		.012	.030	.002	.60	6.5	84.0		0				Absent.	
East Summit	Nov. 9, 1910.	Tap	0	0	0	0	218	26	192	No change.	.008	.008	.000	.20	4.0	93.0		0				In 10.0 cc.	
"	Nov. 30, 1910.	Driven well, 120 feet, pumping station.	0	0	0	0	227	29	192	No charring.	.008	.008	.000	.12	6.0	91.0		0				In 10.0 cc.	
Egg Harbor City	Jan. 17, 1911.	Tap	0	1-v	1-v	0	83	51	44		.008	.012	.012	3.40	18.0	1.5		4				Absent.	
"	Apr. 13, 1911.	Tap	0	0	0	0					.022	.016	.018	1.60	15.0	5.0		0				Absent.	
"	July 5, 1911.	Hydrant	0	0	0	0	97	36	41		.020	.024	.000	1.80	13.0	6.0		22.1				Absent.	
"	Sept. 25, 1911.	Tap; 8-inch main	0	0	0	0	113	36	77		.020	.040	.000	2.40	18.0	8.0		0.3				Absent.	
"	Sept. 25, 1911.	Tap; 8-inch main	0	0	0	0	99	24	77		.022	.032	.000	2.40	18.0	8.0		0				Absent.	
"	Sept. 25, 1911.	Tap; 8-inch main	0	0	0	0	100	34	66		.022	.044	.000	2.40	18.0	8.0		0				Absent.	
"	Oct. 11, 1911.	Tap	0	0	0	0	108	15	83		.004	.018	.000	1.50	16.0	3.0		2.5				Absent.	
Elizabeth	Dec. 13, 1910.	Tap	0	0	0	0	304	45	250	No change.	.000	.020	.000	1.68	8.0	107.0		0				Absent.	
"	Mar. 2, 1911.	Tap	0	2-e	2-e	0	307	59	248		.028	.040	.000	1.12	8.0	102.0		0				In 10.0 cc.	
"	Mar. 28, 1911.	Tap; Railway River	0	2-v	2-v	10					.032	.058	.007	2.40	9.0							Absent.	

CONTINUOUS RECORD OF ANALYSES OF WATER FROM THE PUBLIC SUPPLIES OF NEW JERSEY—RESULTS IN PARTS PER MILLION EXCEPT WHERE OTHERWISE STATED—Continued.

Table with columns: TOWN, DATE, SOURCE OF SAMPLE, Color, Odor, Cold, Odor, Hot, Turbidity, Total Solids, Loss on Ignition, Mineral Residue, Appearance on Ignition, NITROGEN AS (Free Ammonia, Alkalinoid Ammonia, Nitrites, Nitrates, Chlorides, Alkalinity, Hardness, Total, Iron), Bacteria per cc. 20° C., Bacteria per cc. 50° C., Red Colony per cc. 37° C., R. Coll. #

* Slight. † Bleach. ‡ Offensive. § Woolly. ¶ Too high. | Prec.

CONTINUOUS RECORD OF ANALYSES OF WATER FROM THE PUBLIC SUPPLIES OF NEW JERSEY—RESULTS IN PARTS PER MILLION EXCEPT WHERE OTHERWISE STATED—Continued.

TOWN.	DATE.	SOURCE OF SAMPLE.	Color.	Odor, Cohd.	Odor, Hot	Turbidity.	Total Solids.	Loss on Ignition.	Mineral Residue.	Appearance on Ignition.	NITROGEN AS					Alkalinity.	Hardness, Total.	Iron.	Bacteria per cc. 20° C.	Bacteria per cc. 37° C.	Red Colonies per cc. 37° C.	F. Coll.
											Free Ammonia.	Ammonoid Ammonia.	Nitrites.	Nitrates.	Chlorine.							
Hackensack	Oct. 19, 1911.	Tap	35	1-v	0	25	124	10	114		.024	.142	.000	1.80	5.5	47.0						In 10.0 cc.
Hackettstown	Feb. 6, 1911.	Tap: old reservoir	0	0	0	0	36	14	22		.000	.022	.000	2.4	2.0	13.0						In 10.0 cc.
"	Feb. 6, 1911.	Tap: Mine Hill reservoir	0	0	0	0	42	17	25		.040	.052	.000	36	2.0	15.0						In 10.0 cc.
"	Aug. 30, 1911.	Tap	0	0	0	0	151	29	133		.020	.068	.000	12	3.0	23.0						In 0.1 cc.
"	Aug. 30, 1911.	Tap: Hackettstown Water Co.	0	1-e	0	0					.020	.062	.001	.08	2.5	19.0						In 0.1 cc.
Haddonfield	Feb. 16, 1911.	Tap: Haddonfield Water Co.	0	0	0	0	72	48	24		.000	.080	.002	4.60	5.0	2.0						Absent.
"	Feb. 16, 1911.	Tap: municipal supply	10	0	0	35	72	11	61		.058	.018	.004	.04	2.0	74.0						Absent.
"	May 19, 1911.	Tap: Haddonfield Water Co.	0	1-e	2-e	0	81	54	27		.020	.056	.000	.00	6.0	18.0						Absent.
"	May 19, 1911.	Tap: municipal supply	0	0	0	29	151	29	133		.024	.116	.001	.08	4.0	9.0						Absent.
"	Aug. 1, 1911.	Tap: municipal supply	0	0	0	0	122	36	86	No change.	.014	.082	.000	.88	4.5	39.0						Absent.
Haledon	Aug. 1, 1911.	Tap: Haddonfield Water Co.	0	0	0	0	88	36	62	No change.	.032	.048	.004	3.20	6.0	14.0						In 1.0 cc.
"	Nov. 2, 1910.	Tap	0	1-e	2-e	0	106	28	78	Slight darkening.	.012	.076	.000	.00	3.0	48.0						Absent.
"	Jan. 3, 1911.	Reservoir	10	1-v	2-v	0	79	29	50		.012	.094	.002	.20	5.0	17.0						In 1.0 cc.
"	Apr. 3, 1911.	Tap	15	1-v	1-v	0	62	17	45		.024	.116	.001	.08	4.0	9.0						In 10.0 cc.
"	July 24, 1911.	Tap	20	1-v	2-v	0	128	43	83		.032	.092	.007	.00	0.0	46.0						Absent.
Hammonston	Oct. 18, 1911.	Tap	25	0	0	0	111	35	70		.022	.108	.000	.20	3.5	29.0						Absent.
"	Jan. 17, 1911.	Tap	0	0	0	0	28	3	23		.012	.068	.000	.00	3.5	0.0						Absent.
"	Apr. 26, 1911.	Tap	0	1-e	2-e	0	39	30	9		.016	.060	.000	.00	4.5	4.0						Absent.
"	July 5, 1911.	Tap	0	0	0	0	33	19	16	No change.	.006	.028	.001	.04	4.0	12.0						Absent.
"	Oct. 11, 1911.	Tap	0	0	0	0	104	48	56		.018	.012	.000	.00	4.5	0.0						Absent.
Hampton	Mar. 1, 1911.	Tap	0	0	0	0	65	23	42		.012	.050	.000	.48	2.5	12.0						In 10.0 cc.
"	June 6, 1911.	Tap	0	1-e	1-e	0	58	41	12		.016	.060	.001	.40	3.0	31.0						Absent.
"	Sept. 18, 1911.	Tap	0	0	0	0	63	18	47		.018	.060	.000	1.20	3.0	26.0						In 1.0 cc.
Harrison	Mar. 20, 1911.	Tap	0	1-e	2-e	0	87	30	57		.000	.000	.000	5.0	24.0	42.9						Absent.
Haworth	Jan. 12, 1911.	Tap	0	0	0	0	126	34	92		.000	.008	.000	1.44	5.0	58.0						Absent.
"	Apr. 4, 1911.	Tap	0	0	0	0	123	50	73		.004	.008	.000	2.40	5.5	63.0						Absent.
"	July 25, 1911.	Tap	0	0	0	0	130	37	93		.006	.020	.001	.16	6.5	66.0						In 1.0 cc.
"	Oct. 20, 1911.	Tap	0	0	0	0	140	36	104		.004	.034	.000	1.40	6.5	73.0						In 10.0 cc.
Helmetta	Feb. 22, 1911.	Tap: dug well, 23 feet by 10 feet.	0	2-e	2-e	0	83	49	34		.278	.008	.002	2.88	13.0	12.0						6.0
"	Feb. 22, 1911.	Tap: dug well.	0	0	0	0	55	28	27		.016	.024	.000	.96	8.0	3.0						Absent.
"	Jan. 5, 1911.	Dug well, 40 feet by 7 feet.	10	0	0	0	80	24	56		.104	.024	.000	2.40	11.0	5.0						Absent.
"	May 12, 1911.	Dug well, 24 feet by 7 feet.	0	1-e	1-e	0	74	28	46		.284	.058	.003	.00	12.0	0.0						1.2
"	May 12, 1911.	Dug well, 24 feet by 6 feet.	0	1-e	1-e	0	103	45	120		.034	.042	.004	.80	8.0	**						2
"	Aug. 10, 1911.	Tap	0	0	0	0	87	14	33	No change.	.002	.016	.000	.24	1.0	27.0						Absent.
Hibernia	Feb. 8, 1911.	Tap	55	2-e	2-e	35	197	136	61		.016	.054	.000	.08	7.5	130.0						In 10.0 cc.
"	May 15, 1911.	Tap	10	1-v	1-v	20	255	60	195		.034	.078	.000	.28	9.0	156.0						2.2
"	Nov. 2, 1910.	Tap	0	0	0	0	228	38	190		.010	.056	.001	.00	10.0	0.0						In 0.1 cc.
High Bridge	Nov. 2, 1910.	Tap	0	0	0	0	87	14	33	No change.	.002	.016	.000	.24	1.0	27.0						Absent.
"	Mar. 1, 1911.	Tap	0	2-e	2-e	0	52	32	30		.030	.074	.000	.28	8.0	11.0						1
"	June 5, 1911.	Tap	0	1-v	1-v	0	140	126	10		.028	.076	.003	.80	2.5	23.0						In 10.0 cc.
Highlands	Feb. 11, 1911.	Tap	30	0	0	0	50	159	26	124		.000	.014	.000	.12	7.5	84.0					2.1
"	Aug. 16, 1911.	Tap	0	1-e	1-e	0	75	142	28	120		.004	.038	.003	.00	5.5	90.0					8.5
Hightstown	Dec. 2, 1910.	Artesian well, 200 feet, unfiltered.	0	1-e	2-e	0	33	5	28	Slight charring.	.008	.008	.000	.00	0.0	0.0						In 10.0 cc.
"	Feb. 22, 1911.	Tap: unfiltered water	0	0	0	0	43	15	30		.014	.008	.000	.00	3.5	1.0						15.0
"	May 12, 1911.	Tap: filtered water	0	0	0	0	36	20	16		.012	.010	.001	.00	3.0	0.0						Absent.
"	May 12, 1911.	Raw water	0	0	0	0	50	22	28		.034	.044	.004	.00	3.5	8.0						2.0
"	Aug. 10, 1911.	Raw water	0	0	0	0	31	12	19		.016	.028	.000	.00	3.5	2.0						1.0
Hopewell	Aug. 10, 1911.	Tap	0	0	0	0	35	7	28		.008	.008	.000	.00	3.5	2.0						0
"	Jan. 6, 1911.	Tap	0	0	0	0	185	27	158		.000	.020	.000	.12	4.5	150.0						2
"	Apr. 20, 1911.	Tap	0	0	0	0	160	37	129		.000	.000	.001	.20	4.0	141.0						3
"	July 25, 1911.	Tap	20	0	0	0	118	33	85		.014	.070	.000	.00	5.5	68.0						5
"	Sept. 28, 1911.	Tap	0	0	0	0	81	26	55		.036	.094	.000	.04	5.0	28.0						3
Irrington	Nov. 11, 1910.	Driven wells	0	0	0	0	214	27	187	No change.	.004	.016	.000	.20	3.5	98.0						In 0.1 cc.
Island Heights	Dec. 10, 1910.	Driven well, 400 feet by 6 inches.	0	†	†	0	40	10	33	No change.	.096	.034	.000	.30	3.5	55.0						In 10.0 cc.
"	Jan. 20, 1911.	Tap	20	0	0	0	50	106	35	71		.008	.016	.000	.90	3.5	84.0					1.3
"	Apr. 28, 1911.	Tap	0	0	0	0	100	2	28		.022	.022	.000	.00	4.0	53.0						4
"	July 1, 1911.	Hydrant	0	1-e	1-e	0	560	1,900	75	1,825		.028	.112	.000	.08	4.5	50.0					110.0
"	July 1, 1911.	Hydrant	0	1-e	1-e	0	156	17	105		.016	.040	.000	.04	4.5	53.0						In 1.0 cc.
"	July 19, 1911.	Hydrant	0	0	0	0	25	135	46	92		.040	.018	.001	.00	4.0	31.0					16.9
"	Oct. 7, 1911.	Tap	0	0	0	0	40	122	6	116		.004	.018	.000	.00	2.0	50.0					In 0.1 cc.
Jamesburg	Jan. 11, 1911.	Tap	0	0	0	0	60	7	62		.004	.012	.010	.22	3.5	45.0						0
"	Apr. 28, 1911.	Tap	0	0	0	0	49	26	33		.000	.020	.000	.28	4.0	0.0						0
"	July 15, 1911.	Tap	0	0	0	0	68	35	33		.004	.022	.000	.28	4.0	33.0						41.6
"	Oct. 5, 1911.	Tap	0	1-e	0	0	75	23	50		.014	.014	.000	.16	4.0	43.0						

CONTINUOUS RECORD OF ANALYSES OF WATER FROM THE PUBLIC SUPPLIES OF NEW JERSEY—RESULTS IN PARTS PER MILLION EXCEPT WHERE OTHERWISE STATED—Continued.

Table with columns: TOWN, DATE, SOURCE OF SAMPLE, Color, Odor, Cold, Odor, Hot, Turbidity, Total Solids, Loss on Ignition, Mineral Residue, Appearance on Ignition, Nitrogen AS (Free Ammonia, Albuminoid Ammonia, Nitrites, Nitrates, Chlorine, Alkalinity, Hardness, Total), Iron, Bacteria per cc. 20° C., Bacteria per cc. 37° C., Red Colonies per cc. 37° C., B. Coll.

* Slight.

CONTINUOUS RECORD OF ANALYSES OF WATER FROM THE PUBLIC SUPPLIES OF NEW JERSEY—RESULTS IN PARTS PER MILLION EXCEPT WHERE OTHERWISE STATED—Continued.

TOWN.	DATE.	SOURCE OF SAMPLE.	Color.	Odor, Cold.	Odor, Hot.	Turbidity.	Total Solids.	Loss on Ignition.	Mineral Residue.	Appearance on Ignition.	NITROGEN AS				Chlorine.	Alkalinity.	Hardness, Total.	Iron.	Bacteria per cc. 20° C.	Bacteria per cc. 37° C.	Red Colonies per cc. 37° C.	B. Coli.
											Free Ammonia.	Albuminoid Ammonia.	Nitrites.	Nitrates.								
Madison	Feb. 3, 1911	Tap	0	0	0	0	100	37	123		.008	.020	.000	1.80	6.5	89.0						
"	May 11, 1911	Tap	0	0	0	0	173	25	150		.010	.028	.001	2.00	6.5	88.0	80.0	.0				Absent.
"	Aug. 24, 1911	Tap	0	1-e	0	0	168	33	135		.006	.014	.001	.72	7.5	88.0		.0				In 10.0 cc.
Manwah	May 11, 1911	Spring	0	0	0	0	123	26	97	No change.	.004	.016	.000	.24	5.0	69.0	80.0	.0				Absent.
Manasquan	Jan. 11, 1911	Tap	0	0	0	0	45	38	97		.000	.022	.000	.04	10.0	20.0		.4				Absent.
"	Apr. 26, 1911	Tap	0	1-e	1-e	0	45	35	10		.044	.064	.003	.00	9.5	1.0	19.5		.0			Absent.
"	July 13, 1911	Tap	0	0	0	0	59	20	39		.004	.026	.000	.00	11.0	20.0		.7				Absent.
"	Oct. 5, 1911	Tap	0	0	0	0	44	11	33		.018	.030	.000	.00	9.5	9.0		.0				Absent.
Manua	Dec. 10, 1910	Tap	0	0	0	0	207	48	159	No change.	.056	.024	.004	.00	11.5	144.0		.6				Absent.
"	Mar. 7, 1911	Tap	15	† 1	† 1	40	225	65	160		.046	.120	.000	.00	10.5	143.0	47.5	1.6				Absent.
"	June 23, 1911	Hydrant	0	0	0	0	233	50	183		.230	.030	.000	.00	12.5	135.0						In 10.0 cc.
"	Sept. 7, 1911	Tap	10	0	0	0	210	28	182		.030	.082	.000	.32	14.0	138.0		.4				In 10.0 cc.
"	Apr. 27, 1911	Tap	0	1-e	1-e	0	100	50	110		.092	.058	.010	.12	2.5	111.0	84.5	.1				Absent.
"	July 19, 1911	Tap	0	0	0	0	198	30	136		.018	.000	.020	.12	2.5	101.0	57.1	.1				In 1.0 cc.
"	Oct. 5, 1911	Tap	0	1-e	0	0	113	19	94		.016	.024	.013	.12	2.5							
Maple Shade	Sept. 28, 1911	Tap	0	2-e	0	0	120	22	107		.036	.038	.000	.00	3.0	56.0		32.0				Absent.
Margate City	Jan. 17, 1911	Tap	0	0	0	0	122	28	104		.004	.016	.000	.00	13.5	54.0		.9				Absent.
"	Apr. 26, 1911	Tap	20	0	0	0	146	56	166		.044	.038	.006	.04	15.0	53.0	28.0	.0				Absent.
"	July 6, 1911	Tap	0	1-e	2-e	0	133	36	97		.044	.038	.006	.00	16.0	56.0		.1				Absent.
"	Oct. 12, 1911	Tap	0	1-e	0	0	146	18	128		.034	.046	.000	.00	22.0	55.0						Absent.
Marlton	Mar. 16, 1911	Tap	0	0	0	0	187	18	169		.014	.030	.000	.00	3.5	122.0		.3				Absent.
"	June 26, 1911	Tap	0	1-v	1-v	0	201	32	169		.022	.016	.003	.00	5.0	122.0		.1				In 1.0 cc.
"	Sept. 14, 1911	Tap	0	0	0	0	178	20	158		.044	.016	.000	.00	4.3	117.0		.4				In 1.0 cc.
Matawan	Feb. 20, 1911	Tap	0	0	0	0	36	15	21		.014	.020	.000	.00	3.5	16.0	16.9	.2				Absent.
"	May 29, 1911	Tap	0	2-e	2-e	0	42	27	16		.012	.034	.000	.00	2.5	36.0	27.8	.4				Absent.
Mays Landing	Aug. 14, 1911	Tap	0	0	0	0	45	22	23		.016	.014	.000	.00	3.0	11.0		.0				In 10.0 cc.
"	Jan. 18, 1911	Tap	15	0	0	40	97	13	84		.016	.020	.000	.00	4.0	15.0		1.3				Absent.
"	Apr. 27, 1911	Tap	0	0	0	0	38	45	43		.034	.074	.001	.00	4.5	16.0		.4				Absent.
"	July 6, 1911	Tap	0	0	0	0	113	23	90		.012	.036	.000	.00	3.0	14.0	33.8	1.5				Absent.
"	July 13, 1911	Tap; Mays Landing Water Power Co.	100	†	†	0	42	23	14		.024	.082	.000	.04	3.0	6.0		.2				In 0.1 cc.
"	Oct. 12, 1911	Tap; Mays Landing Water Power Co.	100	3-v	0	0	137	25	112		.024	.100	.000	.00	4.0	.0		.1				In 1.0 cc.
"	Oct. 12, 1911	Tap	25	0	0	120	49	17	32		.004	.018	.000	.00	4.5	23.0		.3				Absent.
Medford	Nov. 24, 1910	Tap	35	2-e	3-e	0	31	17	14	Charring	.008	.064	.000	.00	2.0	.0		.4				In 1.0 cc.
"	Nov. 25, 1910	Tap from stand-pipe.	25	2-e	3-e	0	39	17	17	Charring	.008	.056	.000	.00	1.5	.0		.4				In 10.0 cc.
"	Mar. 16, 1911	Tap	50	2-v	2-v	0	45	30	15		.020	.070	.000	.00	3.0			.7				Absent.
"	June 26, 1911	Tap	90	2-v	2-v	0	39	19	17		.022	.072	.000	.04	5.0	9.0		.7				In 1.0 cc.
"	Sept. 14, 1911	Tap	110	1-v	0	0	49	13	30		.018	.064	.000	.00	3.0	.0		1.2				In 0.1 cc.
Mendham	Feb. 9, 1911	Reservoir from spring.	25	2-v	3-v	40	31	50	31		.008	.048	.000	.12	2.5	24.0	15.6	.6				In 10.0 cc.
"	May 13, 1911	Tap	0	1-e	1-e	0	37	20	17		.014	.038	.000	.00	2.0	15.0		.1				In 0.1 cc.
"	Aug. 29, 1911	Tap	0	0	0	0	65	6	59		.014	.140	.001	.00	3.5			.5				In 0.1 cc.
Merchantville	Nov. 14, 1910	Fountain	0	0	0	0	45	10	35	No change.	.008	.008	.000	.28	1.5	14.0		.0				Absent.
"	Feb. 15, 1911	Tap	0	0	0	0	50	17	33		.012	.016	.000	.40	2.5	12.0		.2				Absent.
"	May 15, 1911	Tap	0	0	0	0	43	24	19		.044	.032	.000	.40	3.0	15.0		.4				Absent.
"	Aug. 1, 1911	Tap	0	0	0	0	49	13	36	No change.	.002	.020	.000	.32	4.0	11.0		.0				Absent.
Metuchen	Feb. 8, 1911	Tap	10	0	0	0	138	56	102		.028	.030	.000	.76	7.0		90.0	.0				Absent.
"	May 4, 1911	Tap	0	2-v	2-v	0	280	72	208		.052	.078	.000	.48	7.5	106.0	117.0	.0				Absent.
"	May 31, 1911	Tap	0	0	0	0	303	18	290		.100	.048	.018	.00	49.5	153.0	48.6	1.5				In 1.0 cc.
"	June 26, 1911	Tap; August Eichler	0	1-v	1-v	0	425	45	380		.044	.022	.001	.12	73.5	206.0	39.0	.6				In 1.0 cc.
"	June 26, 1911	Tap; Jerry Hanes	0	0	0	0	361	53	308		.014	.034	.000	.00	74.0	202.0		.6				In 10.0 cc.
"	Sept. 7, 1911	Tap; August Eichler	0	†	0	25	300	30	270		.160	.044	.015	.00	49.0	155.0		1.5				In 10.0 cc.
Midland Park	Nov. 3, 1910	Raw water	0	0	0	0	108	30	78	Slight darkening.	.018	.028	.000	.52	3.5	55.0		.0				Absent.
"	Jan. 4, 1911	Tap	0	0	0	0	115	24	81		.024	.048	.000	1.76	6.5	49.0		.6				In 10.0 cc.
"	Apr. 3, 1911	Well; tap in station.	0	1-e	1-e	0	89	49	50		.064	.028	.000	2.40	7.5	48.0	60.0	.3				Absent.
"	July 5, 1911	Tap on pump; driven wells, raw water.	0	0	0	0	87	32	55		.012	.036	.000	2.40	9.0	45.0		.0				In 10.0 cc.
Milford	Sept. 13, 1911	Tap	0	†	0	0	241	26	201		.018	.024	.004	.48	4.0	83.0		.0				In 0.1 cc.
Millington	Nov. 15, 1910	Dug well, 20 feet by 16 feet.	0	0	0	0	180	41	139	No change.	.004	.012	.004	1.00	4.5	170.0		.4				In 10.0 cc.
"	June 12, 1911	Tap	0	0	0	25	180	41	139		.022	.032	.001	.80	5.5	145.0		.3				In 1.0 cc.
"	Sept. 22, 1911	Tap	0	1-e	0	0	267	26	241		.014	.036	.000	1.20	6.3	153.0		.2				In 10.0 cc.
Milville	Jan. 24, 1911	Filtered water; People's Water Co.	10	0	0	0	39	9	30		.032	.038	.000	.00	3.5	.0		1.3				Absent.
"	Jan. 24, 1911	Raw water, intake from Union Lake; Millville Water Co.	65	3-v	3-v	0	48	26	17		.036	.156	.000	.24	3.5	.0		1.3				In 10.0 cc.
"	Jan. 24, 1911	Filtered water; Millville Water Co.	10	0	0	0	42	26	13		.024	.034	.000	.40	3.5	.0		.4				In 10.0 cc.
"	Jan. 24, 1911	Raw water; People's Water Co.	10	0	0	0	40	35	20		.012	.030	.000	.00	4.0	.0		2.3				In 10.0 cc.
"	Apr. 21, 1911	Tap; unfiltered water; People's Water Co.	0	1-c	1-c	0	65	25	30		.010	.010	.000	.00								

CONTINUOUS RECORD OF ANALYSES OF WATER FROM THE PUBLIC SUPPLIES OF NEW JERSEY—RESULTS IN PARTS PER MILLION EXCEPT WHERE OTHERWISE STATED—Continued.

TOWN.	DATE.	SOURCE OF SAMPLE.	Color.	Odor, Cold.	Odor, Hot.	Turbidity.	Total Solids.	Loss on Ignition.	Mineral Residue.	Appearance on Ignition.	NITROGEN AS				Chlorine.	Alkalinity.	Hardness, Total.	Iron.	Bacteria per cc. 20° C.	Bacteria per cc. 47° C.	Red Colonies per cc. 47° C.	R. Coll.
											Free Ammonia.	Albuminoid Ammonia.	Nitrates.	Nitrites.								
New Lisbon	Sept. 13, 1911.	Dug well, 38 feet by 4 feet.	0	0	0	0	229	34	193		.004	.062	.003	3.20	27.0	116.0		1				
Newton	Mar. 4, 1911.	Tap	0	0	0	0	65	30	35		.006	.068	.000	.00	2.0	22.0		0			In 1.0 cc.	
"	June 9, 1911.	Tap	0	†	†	0	55	44	11		.062	.082	.000	.00	2.0	21.0	31.2	0			Absent.	
Ocean City	Sept. 21, 1911.	Tap	0	1-e	0	0	38	20	18		.018	.064	.000	.00	2.5	23.0		0			Absent.	
"	Nov. 21, 1910.	Tap	0	0	0	0	134	22	112	No change.	.086	.020	.008	.00	7.0	65.0		1			Absent.	
"	Jan. 17, 1911.	Tap	0	0	0	0	126	29	97		.032	.024	.000	.00	8.5	65.0		2			Absent.	
"	Apr. 26, 1911.	Tap	0	0	0	0	139	45	94		.136	.044	.003	.00	9.0	68.0		0			Absent.	
"	July 6, 1911.	Tap	0	0	0	0	61	37	24		.022	.022	.015	.00	8.5	60.0	36.4	1			Absent.	
Ocean Grove	May 26, 1911.	Tap	0	0	0	0	148	30	118		.028	.046	.000	.00	9.5	64.0		3			Absent.	
"	"	Tap	0	0	0	0	133	13	142		.000	.012	.000	.00	3.0	76.0	88.6	1			In 10.0 cc.	
"	Feb. 14, 1911.	Tap	0	0	0	0	155	26	129		.016	.018	.001	.08	2.5	76.0	75.5	1			Absent.	
"	Aug. 5, 1911.	Tap	0	0	0	0	91	25	66		.004	.012	.000	.08	3.0	76.0		1			Absent.	
Orange	Dec. 2, 1910.	Tap	0	0	1-e	0	10	0	0		.016	.064	.006	.32	6.0	30.0		1			In 10.0 cc.	
"	Jan. 5, 1911.	Tap	5	2-e	0	30	91	25	63		.013	.064	.000	.08	4.5	12.0		1.3			Absent.	
"	Jan. 27, 1911.	Tap	35	2-e	3-e	60	93	29	64		.018	.116	.002	.24	6.0	39.0					In 10.0 cc.	
"	Feb. 9, 1911.	Mixed surface and ground water.	5	1-e	0	0	91	29	63		.008	.042	.000	.20	5.0	34.0		2			In 10.0 cc.	
"	Feb. 28, 1911.	Tap	0	0	1-e	0	79	32	47		.012	.046	.000	.00	4.0	28.0		0			Absent.	
"	Apr. 11, 1911.	Tap	0	1-v	1-e	0	89	45	44		.024	.064	.000	.24	5.0	17.0	31.2	0			In 10.0 cc.	
"	June 1, 1911.	Tap	0	1-e	1-e	0	89	45	44		.018	.048	.000	.12	5.0						In 1.0 cc.	
"	June 23, 1911.	Tap	0	0	0	0	88	45	43		.086	.076	.000	.12	6.0						In 0.1 cc.	
"	July 18, 1911.	Tap	20	1-e	1-e	0	110	40	70		.014	.060	.001	.04	6.0	44.0		2.6			In 0.1 cc.	
"	Aug. 2, 1911.	Tap	25	2-e	3-e	0	79	32	47		.024	.064	.000	.16	5.0	43.0		1			In 1.0 cc.	
"	Sept. 14, 1911.	Tap: mixed surface and well water.	0	0	0	0	200	61	139		.020	.080	.002	.00	5.3	37.0		4			In 1.0 cc.	
"	Sept. 14, 1911.	New well, 350 feet by 10 inches.	0	1-e	0	0	501	47	454		†		.120	8.00	36.5	110.0		1.0			In 1.0 cc.	
"	Oct. 20, 1911.	Tap	10	0	0	25	86	17	69		.028	.180	.001	.28	5.0	36.0		4			In 0.1 cc.	
Passaic	Sept. 26, 1911.	Tap	0	1-e	0	0	104	25	79		.038	.062	.000	.24	7.0	32.0		2			In 10.0 cc.	
Paterson	Jan. 3, 1911.	Tap	0	2-e	3-e	0	96	26	70		.042	.090	.000	.34	6.5	11.0		3			Absent.	
"	Apr. 3, 1911.	Tap	0	0	0	0	70	28	44		.024	.066	.000	.04	4.5	7.0	23.4	2			Absent.	
"	July 24, 1911.	Tap	0	1-e	1-e	0	95	25	70		.016	.074	.001	.08	7.5	31.0		1			In 1.0 cc.	
Paulsboro	Mar. 9, 1911.	Tap	40	2-e	2-e	80	108	56	52		.254	.022	.004	4.40	9.5	10.0	40.3	10.0			Absent.	
"	June 20, 1911.	Hydrant	0	1-e	1-e	0	108	53	55		.044	.118	.005	3.20	10.0	11.0	29.9	6			Absent.	
"	Sept. 5, 1911.	Tap	40	0	0	25	104	47	57		.007	.28	10.0	14.0			1.7				Absent.	
"	Mar. 16, 1911.	Tap	40	2-v	2-v	0	34	22	12		.006	.010	.000	.00	3.0	1.0		.85			Absent.	
Pemberton	June 28, 1911.	Tap	80	1-v	1-v	0	22	13	9		.020	.104	.000	.04	4.0	0		1.9			In 1.0 cc.	
"	Sept. 13, 1911.	Tap	250	0	0	0	46	10	30		.020	.196	.000	.00	4.0	**		2.0			In 0.1 cc.	
Pennington	Dec. 5, 1910.	Tap	0	0	0	0	117	29	89	No charring.	.004	.020	.000	.04	4.5	72.0		2			Absent.	
"	Jan. 6, 1911.	Tap	0	0	0	25	90	22	68		.028	.104	.000	.00	4.0	15.0		8			In 0.1 cc.	
"	Mar. 28, 1911.	Tap	0	†	†	1	0	0	0		.022	.064	.000	.00	4.0			1			Absent.	
"	Mar. 28, 1911.	Tap	0	†	†	1	0	0	0		.028	.064	.000	.00	4.0			1			Absent.	
"	Mar. 28, 1911.	Tap	0	†	†	1	0	0	0		.022	.062	.000	.00	4.0	16.0	20.8	2			Absent.	
"	July 13, 1911.	Tap	0	1-e	1-e	0	94	22	72		.014	.170	.000	.00	5.0	50.0	48.7	0			In 0.1 cc.	
Penngrove	Oct. 4, 1911.	Tap	0	2-v	0	0	60	18	48	No change.	.010	.062	.000	.10	4.0	38.0		8			Absent.	
"	Nov. 11, 1910.	Tap	0	0	0	0	60	18	48	No change.	.000	.008	.005	.00	4.0	38.0		0			In 10.0 cc.	
"	Mar. 9, 1911.	Tap	38	2-e	2-v	0	61	32	29		.064	.146	.000	.92	8.0	3.0	19.5	6			In 10.0 cc.	
"	Mar. 9, 1911.	Tap: filtered water	0	2-e	2-e	0	74	10	64		.010	.030	.000	.00	6.0	36.0	26.0	3			Absent.	
"	June 20, 1911.	Pump at pumping station: unfiltered water.	0	0	0	0	89	25	64		.204	.048	.000	.00	7.5	13.0	32.5	12.0			Absent.	
"	Sept. 5, 1911.	Tap: raw water	0	0	0	400	93	25	68		.180	.088	.000	.00	5.5	33.0		10.0			Absent.	
"	Sept. 5, 1911.	Tap: filtered water	0	0	0	0	79	39	40		.020	.052	.000	.00	6.0	43.0		2			Absent.	
Pensauken	Oct. 24, 1911.	Tap: supply of J. N. Wilkens.	0	0	0	0	109	49	60	No change.	.016	.012	.004	10.00	7.5	2.0		4			Absent.	
"	Mar. 4, 1911.	Tap: supply of J. N. Wilkens.	10	0	0	0	97	54	43		.020	.034	.002	4.80	9.0	2.0	26.0	5			Absent.	
"	May 15, 1911.	Tap: supply of J. N. Wilkens.	0	0	0	0	137	87	50		†	.068	.000	3.60	9.5	20.0		1.6			Absent.	
Perth Amboy	Aug. 5, 1911.	Tap at pumping station.	30	0	0	45	148	97	51		.016	.020	.015	8.00	9.0	1.0		7.9			Absent.	
"	Feb. 10, 1911.	Tap	0	0	0	0	24	14	10		.032	.030	.000	.00	5.0	0		3			Absent.	
"	May 31, 1911.	Tap	0	0	0	0	47	13	9		.036	.030	.000	.07	1.5	0	19.5	3			Absent.	
"	Aug. 14, 1911.	Tap	30	2-v	0	0	53	21	32		.046	.034	.001	.00	4.5	24.0		3.2			Absent.	
Phillipsburg	Dec. 8, 1910.	Reservoir	0	0	0	0	123	28	96	No change.	.048	.032	.000	.80	3.5	79.0		0			Absent.	
"	Feb. 24, 1911.	Tap: People's Water Co.	0	2-e	2-e	0	126	30	90		.044	.060	.000	.85	3.5	86.0		0			Absent.	
"	Mar. 10, 1911.	Tap: Lopatcong Water Co.	5	1-e	2-e	25	64	20	44		.012	.088	.000	.24	2.5	22.0	35.1	1			In 10.0 cc.	
"	Mar. 10, 1911.	Tap: People's Water Co.	10	1-v	2-v	0	144	45	99	No charring.	.068	.042	.002	1.90	4.0	87.0	91.4	1.2			Absent.	
"	Aug. 30, 1911.	Tap: People's Water Co.	0	1-v	0	0	48	13	35		.006	.094	.001	.96	5.0	86.0					In 10.0 cc.	
"	Aug. 30, 1911.	Tap: Lopatcong Water Co.	0	1-v	0	0	87	28	62		.018	.082	.003	.12	5.0	35.0		2			In 0.1 cc.	
Pitman	Nov. 11, 1910.	Drilled well, 235 feet by 8 inches.	0	0	0	0	114	8	106	No change.	.044	.016	.000	.00	1.5	78.0		0			Absent.	
"	Mar. 7, 1911.	Tap: Camp Meeting Association supply.	0	1-e	2-e	0	118	7	111		.040	.092	.000	.00	2.5	74.0	143.0	1			Absent.	
"	Mar. 7, 1911.	Tap	0	1-e	2-e	0	119	12	104		.006	.024	.000	.00	3.0	74.0	77.1	1			Absent.	
"	June 19, 1911.	Tap: Camp Meeting Association supply.	0	2-e	0	0	124	14	110		.012	.018	.000	.00								

CONTINUOUS RECORD OF ANALYSES OF WATER FROM THE PUBLIC SUPPLIES OF NEW JERSEY—RESULTS IN PARTS PER MILLION EXCEPT WHERE OTHERWISE STATED—Continued.

TOWN.	DATE.	SOURCE OF SAMPLE.	Color.	Olor, Cold.	Olor, Hot.	Turbidity.	Total Solids.	Loss on Ignition.	Mineral Residue.	Appearance on Ignition.	NITROGEN AS				Chlorine.	Alkalinity.	Hardness, Total.	Iron.	Bacteria per cc. 20° C.	Bacteria per cc. 37° C.	Red Colonies per cc. 37° C.	R. Coll.
											Free Ammonia.	Albuminoid Ammonia.	Nitrates.	Nitrites.								
Pitman	June 19, 1911	Tap	0	1-e	1-e	0	114	27	87		.010	.022	.000	.00	3.5	71.0	90.0					
Plainfield	Sept. 7, 1911	Tap	0	0	0	0	118	15	103		.018	.036	.000	.00	3.5	76.0						Absent.
	Sept. 7, 1911	Tap; Camp Meeting Association supply.	0	0	0	0	120	25	95		.009	.022	.000	.00	4.0	77.0						Absent.
	Nov. 6, 1910	Driven wells	0	0	0	0	158	18	130	No change.	.000	.004	.000	.64	3.5	96.0						Absent.
	Nov. 15, 1910	Tap	0	0	0	0	176	26	150	No change.	.000	.008	.000	1.00	3.5	106.0						Absent.
	Dec. 10, 1910	Tap	0	0	0	0	176	31	145	No change.	.018	.034	.002	.72	4.5	111.0						Absent.
	Jan. 3, 1911	Tap	0	0	0	0	185	40	145		.000	.008	.000	.88	5.5	107.0						Absent.
	Jan. 4, 1911	Tap	0	0	0	0	188	51	137		.008	.024	.000	.64	5.5	112.0						Absent.
	Jan. 4, 1911	Tap	0	0	0	0	187	61	136		.009	.008	.000	.52	5.5	117.0						Absent.
	Feb. 28, 1911	Tap	0	2-e	2-e	0	193	32	161		.008	.010	.001	.36	5.5	125.0						Absent.
	Mar. 22, 1911	Tap	0	0	0	0	195	50	145		.024	.032	.000	.80	5.0							Absent.
	Apr. 4, 1911	Tap	0	2-e	2-e	0	195	50	145		.014	.024	.000	.68	5.5	116.0						Absent.
	Apr. 24, 1911	Tap	0	2-e	2-e	0	195	50	145		.008	.056	.000	.72	5.5							Absent.
	May 1, 1911	Tap	0	1-e	1-e	0	195	50	145		.004	.024	.000	.72	5.5							Absent.
	June 29, 1911	Tap in laboratory	0	0	0	0	195	50	145		.008	.020	.000	.80	5.5							In 10.0 cc.
	July 10, 1911	Tap	0	0	0	0	225	35	190		.010	.034	.000	1.00	6.5							Absent.
	July 25, 1911	Tap	0	0	0	0	225	35	190		.018	.036	.000	.90	7.0	116.0						Absent.
	Aug. 28, 1911	Tap	0	0	0	0	225	35	190		.018	.042	.001	.80	6.5							Absent.
	Sept. 7, 1911	Tap	0	0	0	0	208	21	187		.004	.014	.000	.00	6.0							In 10.0 cc.
	Sept. 13, 1911	Tap	0	0	0	0	208	21	187		.000	.024	.000	1.28	6.5	106.0						In 10.0 cc.
	Sept. 13, 1911	Tap	0	0	0	0	202	21	181		.000	.006	.000	1.00	6.5	117.0						In 10.0 cc.
	Sept. 15, 1911	Tap	0	0	0	0	202	21	181		.012	.044	.000	.90	5.5							Absent.
	Sept. 17, 1911	Tap	0	0	0	0	202	21	181		.010	.046	.000	.08	7.0							Absent.
	Sept. 17, 1911	Tap	0	0	0	0	202	21	181		.010	.040	.000	.28	7.0							Absent.
	Sept. 17, 1911	Tap	0	0	0	0	202	21	181		.010	.040	.000	.28	7.0							Absent.
	Sept. 17, 1911	Tap	25	†	†	0	202	21	181		.028	.056	.000	.00	8.0							In 10.0 cc.
	Sept. 18, 1911	Tap on main from South Plainfield.	0	0	0	0	202	21	181		.012	.040	.120	.28	6.5							Absent.
	Sept. 18, 1911	Tap on main to Westfield.	0	0	0	0	202	21	181		.018	.036	.000	.72	6.5							Absent.
	Sept. 18, 1911	Driven well, 400 feet; Northwood Springs.	0	0	0	0	202	21	181		.018	.034	.000	.80	7.5							Absent.
	Sept. 20, 1911	Suction well, artesian water.	0	0	0	0	214	27	187		.018	.050	.062	1.00	4.0	118.0						In 10.0 cc.
	Sept. 20, 1911	Tap; North Plainfield	0	0	0	0	195	19	170		.014	.018	.000	.72	6.5	112.0						Absent.
	Sept. 20, 1911	Tap	0	0	0	0	195	19	170		.012	.022	.000	.64	6.5	117.0						Absent.
	Sept. 20, 1911	Tap	0	0	0	0	195	19	170		.010	.022	.000	.68	6.5	113.0						Absent.
	Sept. 20, 1911	Driven well, No. 30	0	0	0	0	236	17	219		.028	.042	.000	2.40	5.0	110.0						Absent.
	Sept. 20, 1911	Tap	0	0	0	0	236	17	219		.074	.048	.070	.12	5.5	115.0						Absent.
	Sept. 20, 1911	Tap	0	0	0	0	195	19	170		.008	.032	.000	.00	5.0							In 1.0 cc.
	Sept. 20, 1911	Tap	0	0	0	0	195	19	170		.012	.022	.000	.64	6.5	117.0						In 10.0 cc.
	Sept. 20, 1911	Tap	0	0	0	0	195	19	170		.010	.022	.000	.68	6.5	113.0						Absent.
	Sept. 20, 1911	Tap	0	0	0	0	195	19	170		.018	.050	.062	1.00	4.0	118.0						In 10.0 cc.
	Sept. 20, 1911	Tap	0	0	0	0	195	19	170		.014	.018	.000	.72	6.5	112.0						Absent.
	Sept. 20, 1911	Tap	0	0	0	0	195	19	170		.012	.022	.000	.64	6.5	117.0						Absent.
	Sept. 20, 1911	Tap	0	0	0	0	195	19	170		.010	.022	.000	.68	6.5	113.0						Absent.
	Sept. 20, 1911	Tap	0	0	0	0	195	19	170		.028	.042	.000	2.40	5.0	110.0						Absent.
	Sept. 20, 1911	Tap	0	0	0	0	195	19	170		.074	.048	.070	.12	5.5	115.0						Absent.
	Sept. 20, 1911	Tap	0	0	0	0	195	19	170		.008	.032	.000	.00	5.0							In 1.0 cc.
	Sept. 20, 1911	Tap	0	0	0	0	195	19	170		.012	.022	.000	.64	6.5	117.0						In 10.0 cc.
	Sept. 20, 1911	Tap	0	0	0	0	195	19	170		.010	.022	.000	.68	6.5	113.0						Absent.
	Sept. 20, 1911	Tap	0	0	0	0	195	19	170		.018	.050	.062	1.00	4.0	118.0						In 10.0 cc.
	Sept. 20, 1911	Tap	0	0	0	0	195	19	170		.014	.018	.000	.72	6.5	112.0						Absent.
	Sept. 20, 1911	Tap	0	0	0	0	195	19	170		.012	.022	.000	.64	6.5	117.0						Absent.
	Sept. 20, 1911	Tap	0	0	0	0	195	19	170		.010	.022	.000	.68	6.5	113.0						Absent.
	Sept. 20, 1911	Tap	0	0	0	0	195	19	170		.018	.050	.062	1.00	4.0	118.0						In 10.0 cc.
	Sept. 20, 1911	Tap	0	0	0	0	195	19	170		.014	.018	.000	.72	6.5	112.0						Absent.
	Sept. 20, 1911	Tap	0	0	0	0	195	19	170		.012	.022	.000	.64	6.5	117.0						Absent.
	Sept. 20, 1911	Tap	0	0	0	0	195	19	170		.010	.022	.000	.68	6.5	113.0						Absent.
	Sept. 20, 1911	Tap	0	0	0	0	195	19	170		.018	.050	.062	1.00	4.0	118.0						In 10.0 cc.
	Sept. 20, 1911	Tap	0	0	0	0	195	19	170		.014	.018	.000	.72	6.5	112.0						Absent.
	Sept. 20, 1911	Tap	0	0	0	0	195	19	170		.012	.022	.000	.64	6.5	117.0						Absent.
	Sept. 20, 1911	Tap	0	0	0	0	195	19	170		.010	.022	.000	.68	6.5	113.0						Absent.
	Sept. 20, 1911	Tap	0	0	0	0	195	19	170		.018	.050	.062	1.00	4.0	118.0						In 10.0 cc.
	Sept. 20, 1911	Tap	0	0	0	0	195	19	170		.014	.018	.000	.72	6.5	112.0						Absent.
	Sept. 20, 1911	Tap	0	0	0	0	195	19	170		.012	.022	.000	.64	6.5	117.0						Absent.
	Sept. 20, 1911	Tap	0	0	0	0	195	19	170		.010	.022	.000	.68	6.5	113.0						Absent.
	Sept. 20, 1911	Tap	0	0	0	0	195	19	170		.018	.050	.062	1.00	4.0	118.0						In 10.0 cc.
	Sept. 20, 1911	Tap	0	0	0	0	195	19	170		.014	.018	.000	.72	6.5	112.0						

CONTINUOUS RECORD OF ANALYSES OF WATER FROM THE PUBLIC SUPPLIES OF NEW JERSEY—RESULTS IN PARTS PER MILLION EXCEPT WHERE OTHERWISE STATED—Continued.

TOWN.	DATE.	SOURCE OF SAMPLE.	Color.	Color, turbid.	Color, lit.	Turbidity.	Total Solids.	Loss on Ignition.	Mineral Residue.	Appearance on Ignition.	NITROGEN AS				Chlorine.	Alkalinity.	Hardness, Total.	Iron.	Bacteria per cc. 20° C.	Bacteria per cc. 37° C.	Red Colonies per cc. 37° C.	R. Coll.
											Free Ammonia.	Albuminoid Ammonia.	Nitrates.	Nitrites.								
Raritan	Jan. 6, 1911.	River water	10	2-e	3-e	45	135	34	101		.028	.004	.002	.00	5.0	26.0						
"	Jan. 6, 1911.	Tap; filtered water	0	1-e	2-e	0	91	22	69		.028	.056	.000	.72	4.5	10.0						In 1.0 cc.
"	Apr. 4, 1911.	Raw water	0	1-e	1-e	10	83	40	43		.018	.088	.003	.68	3.5	30.0						Absent.
"	Apr. 4, 1911.	Tap; filtered water	0	0	0	0	69	21	48		.010	.030	.002	.04	3.5	20.0						Absent.
"	July 25, 1911.	Tap; filtered water	0	1-e	1-e	0	92	27	65		.088	.060	.000	.40	5.0	13.0						In 10.0 cc.
"	July 25, 1911.	Raw water; well	0	1-e	1-e	800					.068	§	.001	.40	5.0							In 0.1 cc.
"	Oct. 3, 1911.	Raw water	0	2-e	0	39	191	30	161		.062	.130	.005	8.0	4.5	25.0						In 0.1 cc.
"	Oct. 3, 1911.	Tap; filtered water	0	0	0	0	71	25	46		.016	.062	.000	.68	4.5	11.0						Absent.
Red Bank	Feb. 11, 1911.	Tap	30	0	0	35	211	125	86		.010	.040	.000	.00	6.0	108.0	130.0					Absent.
"	May 25, 1911.	Tap	0	1-e	1-e	20	159	21	138		.016	.038	.000	.00	6.5	105.0	107.5					In 10.0 cc.
"	Aug. 14, 1911.	Tap	0	2-e	0	30	188	40	128		.004	.040	.001	.00	7.0	108.0						In 10.0 cc.
"	Dec. 29, 1910.	Tap; pumps	0	0	0	0	186	0	0		.000	.016	.000	1.04	5.5	51.0						Absent.
"	Jan. 4, 1911.	Tap	0	0	0	0	106	0	0		.006	.024	.000	1.24	6.0	32.0						In 10.0 cc.
"	July 5, 1911.	Tap	0	†	†	0	117	26	91		.006	.028	.000	2.40	9.0	53.0						In 10.0 cc.
"	Oct. 18, 1911.	Tap	0	1-e	0	0	197	40	157		.014	.050	.003	2.40	6.5	6.0						In 10.0 cc.
Riegelsville	Mar. 1, 1911.	Tap	0	1-e	1-e	30	88	12	76		.040	.044	.000	1.28	3.5	10.0						In 10.0 cc.
"	June 24, 1911.	Tap	0	1-e	0	0	82	62	20		.004	.012	.000	1.20	3.5	14.0						In 1.0 cc.
"	Sept. 15, 1911.	Tap	0	1-e	0	0	106	21	78		.004	.012	.000	1.80	3.5	12.0						In 1.0 cc.
Riverside	Nov. 29, 1910.	Tap	0	1-e	2-e	*	108	45	63	Slight charring.	.008	.008	.000	4.00	11.0	6.0						Absent.
Riverton	Jan. 4, 1911.	Tap	0	0	0	0	128	57	71		.000	.008	.000	5.76	19.0	8.0						Absent.
"	Apr. 18, 1911.	Tap	0	0	0	0	180	107	73		.012	.024	.001	4.80	13.0	9.0						Absent.
"	July 24, 1911.	Tap	0	0	0	0	138	67	69		.010	.024	.000	2.80	16.0	25.0						Absent.
"	Oct. 2, 1911.	Tap	0	0	0	0	105	47	58		.030	.040	.000	4.00	17.0	9.0						Absent.
Rockaway	Mar. 2, 1911.	Tap	100	1-e	1-e	0	105	47	58		.020	.070	.000	.32	2.5	32.0	45.0					In 10.0 cc.
"	June 9, 1911.	Tap	100	0	0	0	0	0	0		.062	.240	.000	.32	1.5							In 1.0 cc.
"	June 10, 1911.	Reservoir	100	‡	‡	15	128	83	45		.088	§	.006	.18	3.0	40.0						In 1.0 cc.
"	June 10, 1911.	Brook	100	1-v	2-v	* 15	185	80	85		.000	.370	.006	.28	3.0	43.0	45.7					In 0.1 cc.
"	July 14, 1911.	Reservoir	50	0	0	0	28	9	19		.076	.240	.010	.04	4.5	54.0						In 1.0 cc.
"	July 14, 1911.	Mine outlet	0	1-e	1-e	*	104	35	48		.026	.070	.001	.04	5.0	51.0						In 0.1 cc.
"	July 14, 1911.	Mine, 148 degrees F.; Mt. Hope	10	†	†	70	215	28	192		.042	.032	.010	.36	7.5	111.0						Absent.
"	July 14, 1911.	Tap	35	0	0	*	110	28	82		.030	.154	.000	.12	4.5	61.0						In 0.1 cc.
"	Aug. 21, 1911.	Reservoir	10	1-e	0	0	233	23	218		.018	.078	.008	.00	5.0	79.0						In 0.1 cc.
"	Sept. 21, 1911.	Tap	10	1-e	0	*	77	24	53		.014	.076	.000	.24	5.0	63.0						In 1.0 cc.
Roehling	Jan. 4, 1911.	Tap	0	1-e	2-e	*	77	24	53		.060	.060	.000	.36	4.5	11.0						In 0.1 cc.
"	Apr. 18, 1911.	Tap; filtered water	5	1-v	1-v	0	159	125	34	No alum.	.016	.052	.000	.24	2.0	10.0	27.3					In 10.0 cc.
"	Apr. 18, 1911.	Tap; raw water	50	1-e	1-e	*	161	115	46		.044	.002	.002	.20	3.0	9.0	26.0					In 1.0 cc.
"	May 15, 1911.	Tap; raw water	50	1-e	1-e	*	161	115	46		.044	.002	.002	.20	3.0	9.0	26.0					In 0.1 cc.
"	May 15, 1911.	Coagulated and disinfected.															1,100	200-16*				In 1.0 cc.
"	May 15, 1911.	Treated and disinfected.															450	182				In 1.0 cc.
"	July 24, 1911.	From distributing wagon; filtered and sterilized water.	0	2-e	3-e	0	102	20	82		.008	.034	.001	.12	8.0	28.0						In 0.0 cc.
"	July 24, 1911.	Tap; filtered water	0	2-e	3-e	0	88	28	65		.006	.052	.000	.12	8.0	27.0						In 0.1 cc.
"	July 24, 1911.	Raw water	0	2-e	3-e	50	179	72	107		.090	.200	.002	.12	6.0	35.0						In 0.1 cc.
"	Sept. 21, 1911.	Tap; filtered water	0	0	0	0	100	16	84		.005	.058	.000	.32	4.5	24.0						Absent.
"	Oct. 2, 1911.	Tap; raw water	10	2-e	0	*	290	40	250		.060	.124	.001	.16	4.5	27.0						Absent.
Rumson	Feb. 11, 1911.	Tap	0	2-v	2-v	0	81	26	33		.038	.056	.000	.24	9.0	18.0	35.1					Absent.
"	Mar. 8, 1911.	Tap	0	1-e	2-e	0	68	26	42		.026	.064	.000	.00	7.5	28.0	42.9					Absent.
"	June 15, 1911.	Tap	20	2-e	2-e	30	80	16	70		.024	.092	.002	.16	8.0	42.0	45.7					In 1.0 cc.
"	Sept. 4, 1911.	Tap	0	0	0	0	205	28	177		.034	.060	.000	.00	7.5	135.0	168.0					In 1.0 cc.
"	Sept. 4, 1911.	Tap	0	1-e	1-e	30	186	22	104		.012	.050	.000	.00	7.5	140.0						In 1.0 cc.
Sea Girt	Jan. 11, 1911.	Tap	0	0	0	0	87	35	52		.018	.012	.004	1.80	14.0							Absent.
"	Apr. 26, 1911.	Tap	0	0	0	0	102	50	52		.170	.074	.040	2.00	16.0	11.0	36.4					Absent.
"	July 20, 1911.	Tap	0	1-e	1-e	0	132	26	126		.300	.050	.068	1.00	26.0	11.0	82.5					Absent.
"	Aug. 12, 1911.	Tap	0	2-e	0	0	128	38	90		.052	.032	.001	.80	4.5	11.0						Absent.
"	Oct. 5, 1911.	Tap	0	1-v	0	0	113	13	100		§	.....	.200	1.60	18.5	12.0						Absent.
Sea Isle City	Nov. 10, 1910.	Driven well	0	0	0	0	167	31	136	No change.	.132	.012	.004	.00	15.0	82.0						Absent.
"	Feb. 21, 1911.	Tap	0	0	0	0	168	0	168		.033	.191	.003	.00	18.0	80.0						Absent.
"	May 17, 1911.	Tap	0	0	0	0	170	42	128	No charring.	.003	.....	.000	.00	16.0	85.0	31.2					Absent.
"	Aug. 7, 1911.	Tap	0	0	0	0	188	60	128	No change.	.100	.028	.006	.00	18.0	86.0						Absent.
Seaside Park	Nov. 10, 1910.	Tap	0	0	0	0	148	25	123	No change.	.064	.012	.000	.00	2.0	84.0						Absent.
"	Apr. 27, 1911.	Tap	0	0	0	0	129	55	74		.....	.....	.000	.00	5.0	78.0	47.3					Absent.
"	Oct. 6, 1911.	Tap	0	0	0	25	82	27	63		.066	.062	.000	.00	4.0	77.0						Absent.
"	Dec. 6, 1910.	Tap	0	0	0	0	150	18	132	No change.	.008	.016	.000	.02	7.0	35.0						Absent.
"	Jan. 7, 1911.	Tap	0	0	0	0	163	105	58		.004	.072	.000	.56	6.5	98.0						In 10.0 cc.
"	Apr. 10, 1911.	Tap	0	1-e	1-e	0	179	41	138		.022	.038	.001	.00	7.0	110.0	104.0					

TOWN.	DATE.	SOURCE OF SAMPLE.	Color.	Odor, Cold.	Odor, Hot.	Turbidity.	Total Solids.	Loss on Ignition.	Mineral Residue.	Appearance on Ignition.	NITROGEN AS				Chlorine.	Alkalinity.	Intrinsics, Total.	Iron.	Bacteria per cc. 20° C.	Bacteria per cc. 37° C.	Red Colonies per cc. 37° C.	B. Coll.
											Free Ammonia.	Albuminoid Ammonia.	Nitrites.	Nitrates.								
Short Hills	July 26, 1911	Tap	0	0	0	0	162	25	137		.016	.020	.000	.20	7.0	95.0		.1				In 10.0 cc.
Smithville	Oct. 20, 1911	Tap	0	1-e	0	0	177	29	130		.004	.024	.002	.80	6.0	90.0						In 10.0 cc.
	Feb. 28, 1911	Tap; driven well; filtered water.	0	1-v	1-v	0	104	15	86		.006	.012	.000	.30	2.5	51.0						In 10.0 cc.
	Mar. 14, 1911	Tap; filtered water	0	0	0	0	114	18	96		.022	.082	.002	.00	8.0	85.0		.0				Absent.
	Mar. 14, 1911	Driven well	0	0	0	*	109	14	95		.004	.064	.001	.00	3.5	52.0		8.0				Absent.
	June 23, 1911	Tap	0	1-e	1-e	0	133	37	96		.016	.022	.000	.00	3.0	18.0						In 10.0 cc.
	Sept. 11, 1911	Tap	0	1-e	0	0	98	19	79		.014	.036	.000	.30	2.5	50.0		.2				Absent.
Somerdale	Aug. 21, 1911	Tap	0	†	0	‡ 300					.008	.022	.000	.00	8.5							Absent.
South Plainfield	June 14, 1911	Pond	0	1-e	1-e	0	168	41	127		.026	.270	.007	.00	5.5	65.0						In 0.1 cc.
	June 14, 1911	Tap; mixed well and filtered pond water.	0	1-e	1-e	0	284	56	228		.024	.070	.000	.60	7.5			67.1	1.5			In 0.1 cc.
	July 13, 1911	Reservoir	30	0	0	0	20				.020	.200	.000	.00	7.0							In 0.1 cc.
	July 24, 1911	Pond; raw water	0	2-e	3-e	0	50				.010	.200	.003	.00	7.0	81.0						In 0.1 cc.
	July 24, 1911	Well; filtered water.	0	2-e	3-e	0	354	89	315		.036	.042	.001	.60	8.0	91.0						In 0.1 cc.
	July 24, 1911	Tap; mixed well and filtered pond water.	0	2-e	3-e	0	267	20	247		.060	.018	.000	.60	8.0	96.0						In 1.0 cc.
	Oct. 3, 1911	Tap; driven well	0	0	0	0	317	23	294		.026	.060	.000	.68	8.0	116.0						Absent.
Sparta	June 7, 1911	Tap	0	0	0	0	181	121	60		.018	.038	.001	.12	2.5	158.0		95.7				Absent.
Spring Lake	Feb. 14, 1911	Tap	0	0	0	0	140	16	124		.034	.052	.001	.24	4.0	140.0						Absent.
	May 26, 1911	Tap	0	0	0	0	107	30	77		.012	.028	.000	.00	2.5	73.0		71.5				Absent.
	Aug. 12, 1911	Tap	0	1-e	1-e	0	103	31	72		.032	.036	.002	.16	7.3	61.0		69.0				In 0.1 cc.
	Aug. 12, 1911	Tap	0	2-e	0	*	105	33	72		.018	.028	.001	.16	2.5	77.0						In 0.1 cc.
Stanhope	Jan. 24, 1911	Tap	55	0	0	*	73	27	46	No change	.020	.074	.000	.32	2.5	23.0						Absent.
Stirling	Nov. 4, 1910	Tap	0	0	0	0	212	41	171		.004	.068	.000	.28	4.0	181.0						In 10.0 cc.
	Nov. 7, 1911	Two wells, 200 and 190 feet.	0	0	0	0	249	47	202		.006	.236	.000	.35	6.0	185.0		201.5				Absent.
	June 12, 1911	Tap	0	0	0	0	0	0	0		.024	.054	.000	.16	7.0							In 10.0 cc.
	Sept. 22, 1911	Tap	0	1-e	0	0	253	22	231		.000	.014	.001	.40	6.5	182.0						In 10.0 cc.
Stockton	Nov. 12, 1910	Driven wells	0	0	0	0	102	18	84	No change	.000	.020	.000	1.08	1.0	52.0						Absent.
	Mar. 1, 1911	Tap; two artesian wells, 160 feet by 3 inches.	0	2-e	2-e	0	95	15	80		.006	.008	.000	1.24	3.5	42.0						Absent.
	June 17, 1911	Tap	0	2-e	3-e	0	92	30	62		.024	.042	.000	.32	3.5	32.0		23.4				Absent.
	Sept. 12, 1911	Tap	0	1-e	0	0	107	22	85		.002	.016	.000	1.80	3.5	44.0						In 10.0 cc.
	Feb. 21, 1911	Tap	0	0	0	0	195	38	157		.046	.018	.018	.00	17.0	97.0						Absent.
	May 18, 1911	Tap	0	1-e	2-e	0	220	38	182		.204	.064	.002	.00	17.5	103.0		16.0				Absent.
	Aug. 7, 1911	Tap	0	0	0	0	195				.200	.028	.030	.00	16.5	101.0						Absent.
Summit	Jan. 7, 1911	Tap; Canoe Brook water.	0	0	0	0	224	57	167		.000	.010	.000	.08	5.5	97.0						Absent.
	Jan. 7, 1911	Tap; Green Brook water.	0	0	0	0	134	39	95		.028	.044	.000	.20	4.5	61.0						In 1.0 cc.
	Mar. 21, 1911	Tap; Green Brook Plant	0	0	0	0	0	0	0													In 10.0 cc.
	Mar. 21, 1911	Well; Canoe Brook Plant	0	2-e	2-e	0	227	31	196		.028	.038	.000	.00	5.5	96.0						Absent.
	Mar. 23, 1911	Tap; Canoe Brook Plant	0	0	0	0	112	38	74		.024	.034	.000	.16	4.0	31.0						In 10.0 cc.
	Mar. 23, 1911	Tap; Green Brook Plant	0	1-e	2-e	0	112	33	80		.004	.042	.000	.16	3.0	29.0		41.6				In 10.0 cc.
	Apr. 10, 1911	Tap; Green Brook Plant	0	0	0	0	48	29	19		.018	.052	.000	.12	2.5	32.0		49.3				In 10.0 cc.
	Apr. 10, 1911	Tap; Canoe Brook Plant	0	2-e	2-e	0	48	29	19													In 10.0 cc.
	June 23, 1911	Tap; Canoe Brook Plant	0	1-e	1-e	0	208	115	93		.000	.024	.000	.12	6.0	94.0						Absent.
	July 26, 1911	Tap; Canoe Brook Plant	0	1-e	1-e	0	226	41	178		.010	.022	.000	.28	6.5	91.0						In 10.0 cc.
	July 26, 1911	Tap; Green Brook Plant	15	0	0	0	109	45	66		.026	.042	.000	.16	3.5	40.0						Absent.
	Aug. 24, 1911	Well; Canoe Brook Plant Station.	0	0	0	0	0	0	0		.000	.012	.000	.08	6.5							In 10.0 cc.
	Aug. 24, 1911	Tap; Green Brook water	0	1-e	0	0	0	0	0		.006	.020	.001	.00	5.0							In 10.0 cc.
	Oct. 20, 1911	Tap; Green Brook water	0	2-e	0	0	114	27	87		.014	.080	.002	.20	3.5	33.0						In 1.0 cc.
Surf City	Oct. 20, 1911	Tap; Canoe Brook water	15	3-e	0	*	100	18	82		.013	.068	.000	.24	3.5	32.0						In 1.0 cc.
	Jan. 18, 1911	Driven well, 564 feet by 6 inches.	0	0	0	0	77	9	68		.032	.008	.000	.00	4.5	13.0		4.0				Absent.
	Apr. 21, 1911	Tap	0	0	0	0	109	19	39		.008	.000	.000	.00	4.5	15.0		16.9				Absent.
	July 21, 1911	Tap	0	‡ 1	‡ 1	0	30	70	23		.010	.016	.000	.00	5.0	19.0						In 10.0 cc.
	Oct. 7, 1911	Tap	0	0	0	0	0	0	0		.042	.080	.000	.00	4.5	19.0						Absent.
Sussex	Mar. 3, 1911	Tap	15	0	0	0	41	19	22		.016	.064	.000	.00	3.0	13.0		16.9				In 10.0 cc.
	June 8, 1911	Tap	0	0	0	0	189	154	35		.030	.080	.002	.12	1.5	25.0		24.7				In 0.1 cc.
	Sept. 20, 1911	Tap	0	0	0	0	44	23	21		.018	.066	.001	.08	2.5	9.0						In 0.1 cc.
Swedesboro	Dec. 12, 1910	Artesian well, 135 feet by 8 inches.	30	0	0	0	80				.154	.022	.002	.00	10.0	76.0						Absent.
	Mar. 6, 1911	Tap	20	2-e	2-e	30	134	39	95		.046	.046	.000	.00	10.0	70.0		60.0				Absent.
	June 16, 1911	Tap	0	1-e	2-e	0	135	7	128		.080	.032	.001	.00	11.0	73.0		60.0				In 10.0 cc.
Toms River	Sept. 5, 1911	Tap	0	†	0	0	132	27	105		.004	.034	.000	.00	11.0	81.0						Absent.
	Dec. 11, 1910	Driven wells (3), 39 feet by 6 inches.	0	0	0	0	127	47	80		.081	.028	.001	.16	6.0	1.0		2.4				In 10.0 cc.
	Jan. 19, 1911	Tap	0	0	0	0	34	16	18		.020	.028	.000	.08	7.0							Absent.
	Apr. 22, 1911	Tap	0	0	0	0	44	21	23													Absent.
	July 19, 1911	Tap	10	0	0	0	48	24	24		.000	.010	.000	.00	7.0	9.0		9.5				Absent.
	Oct. 6, 1911	Tap	0	2-e	0	0	28	11	17		.020	.038	.000	.00	5.0	15.0						Absent.
Trenton	Nov. 2, 1910	Tap on pump																80				In 10.0 cc.
	Nov. 4, 1910	Tap on pump	10	2-e	3-e	‡ 120	240	46														

CONTINUOUS RECORD OF ANALYSES OF WATER FROM THE PUBLIC SUPPLIES OF NEW JERSEY—RESULTS IN PARTS PER MILLION EXCEPT WHERE OTHERWISE STATED—Continued.

TOWN.	DATE.	SOURCE OF SAMPLE.	Color.	Oder, Calt.	Oder, Hat.	Turbidity.	Total Solids.	Loss on Ignition.	Mineral Residue.	Appearance on Ignition.	NITROGEN AS				Chlorine.	Alkalinity.	Hardness, Total.	Iron.	Bacteria per cc. 20° C.	Bacteria per cc. 37° C.	Red Colonies per cc. 37° C.	H. Coli.	
											Free Ammonia.	Albuminoid Ammonia.	Nitrites.	Nitrates.									
Trenton	Nov. 15, 1910.	Tap in laboratory.	10	2-e	3-e	*	117	28	89	Slight darkening.	.004	.096	.000	.38	2.5	35.0		.6	155	82		In 0.1 cc.	
"	Nov. 16, 1910.	Tap on pump.																210	84		In 1.0 cc.		
"	Nov. 17, 1910.	Tap in laboratory.																200	41		In 0.1 cc.		
"	Nov. 18, 1910.	Tap in laboratory.																90	27		In 1.0 cc.		
"	Nov. 21, 1910.	Tap in laboratory.																240	24		In 1.0 cc.		
"	Nov. 22, 1910.	Tap in laboratory.																160	24		In 1.0 cc.		
"	Nov. 23, 1910.	Tap in laboratory.																190	17		In 1.0 cc.		
"	Nov. 28, 1910.	Tap in laboratory.																170	10		In 1.0 cc.		
"	Nov. 29, 1910.	Tap in laboratory.																270	19		In 0.1 cc.		
"	Dec. 2, 1910.	Tap on pump.	5	2-e	3-e	*	79	51	28	Slight charring.	.012	.088	.003	.36	4.0	31.0		.2	240	36		In 1.0 cc.	
"	Dec. 2, 1910.	Tap in laboratory.	5	2-e	3-e	*				Slight charring.	.004	.074	.002	.28	4.0	33.0		.2	230	11		In 10.0 cc.	
"	Dec. 5, 1910.	Tap on pump.																250	18		In 1.0 cc.		
"	Dec. 6, 1910.	Tap on pump.																270	22		In 10.0 cc.		
"	Dec. 8, 1910.	Tap on pump.																270	13		In 10.0 cc.		
"	Dec. 8, 1910.	Tap on pump.	5	2-e	3-e	*	94	31	63	Slight charring.	.024	.060	.006	.32	5.0	32.0		.3				In 1.0 cc.	
"	Dec. 9, 1910.	Tap in laboratory.	5	2-e	3-e	*	83	26	62	Slight charring.	.004	.060	.004	.18	4.5	32.0		.2				In 1.0 cc.	
"	Dec. 12, 1910.	Tap on pump.																				In 1.0 cc.	
"	Dec. 16, 1910.	Tap on pump.	25	3-e	3-e	*	87	26	61	Slight charring.	.014	.056	.002	.24	4.5	42.0		.2				In 1.0 cc.	
"	Dec. 16, 1910.	Tap in laboratory.					98	29	69	Slight charring.	.028	.062	.004	.32	5.0	36.0		.2	400	24		In 1.0 cc.	
"	Dec. 17, 1910.	Tap in laboratory.																350	22		In 1.0 cc.		
"	Dec. 19, 1910.	Tap on pump.																300	16		In 10.0 cc.		
"	Dec. 21, 1910.	Tap on pump.	0	2-e	3-e	*	100	41	59		.014	.090	.004	.36	5.0	40.0		.4	150	11	300	In 10.0 cc.	
"	Dec. 21, 1910.	Tap in laboratory.					100	38	60		.030	.090	.006	.32	5.0	33.0		.6	600	46		In 10.0 cc.	
"	Dec. 22, 1910.	Tap on pump.	0	2-e	3-e	*												250	85		In 1.0 cc.		
"	Dec. 23, 1910.	Tap on pump.					40	104	41	63		.036	.089	.004	.36	4.5	28.0		.6	200	70		In 0.1 cc.
"	Dec. 27, 1910.	Tap on pump.	20	2-e	2-e	*	101	41	63		.063	.081	.002	.32	4.0	35.0		.6	700	50		In 1.0 cc.	
"	Dec. 27, 1910.	Tap in laboratory.	20	2-e	2-e	*	35	104	41	60		.063	.081	.002	.32	4.0	35.0		.6	900	70		In 0.1 cc.
"	Dec. 28, 1910.	Tap in laboratory.																900	70		In 1.0 cc.		
"	Dec. 28, 1910.	Tap on pump.																900	110		In 1.0 cc.		
"	Dec. 29, 1910.	Tap on pump.																1,000	100		In 1.0 cc.		
"	Dec. 30, 1910.	Tap on pump.																5,000	350		In 1.0 cc.		
"	Dec. 31, 1910.	Tap in laboratory.																				In 1.0 cc.	
"	Jan. 3, 1911.	Tap on pump.	20	2-e	2-e	*	80	307	63	244		.024	.116	.002	.48	3.5	16.0		6.0			In 1.0 cc.	
"	Jan. 3, 1911.	Tap in laboratory.	25	2-e	2-e	*	40	88	28	60		.096	.208	.002	.48	4.0	26.0		8			In 1.0 cc.	
"	Jan. 5, 1911.	Tap on pump.																5,000	600			In 0.1 cc.	
"	Jan. 6, 1911.	Tap on pump.																5,000	230			In 0.1 cc.	
"	Jan. 10, 1911.	Tap on pump.																600	140			In 1.0 cc.	
"	Jan. 12, 1911.	Tap in laboratory.	5	1-e	2-e	*	25	75	33	62		.018	.100	.002	.44	3.0	11.0		9			Absent.	
"	Jan. 12, 1911.	Tap on pump.	5	1-e	2-e	*	100	31	69		.024	.088	.002	.44	3.0	16.0		2.1	400	120		In 1.0 cc.	
"	Jan. 13, 1911.	Tap in laboratory.																550	100			In 1.0 cc.	
"	Jan. 13, 1911.	Tap on pump.	5	3-e	2-e	*	220	28	49		.014	.092	.000	.36		3.0			2,200	100		In 1.0 cc.	
"	Jan. 19, 1911.	Tap on Barr pump.	5	3-e	2-e	*	30	86	36	60		.038	.089	.002	.32	3.0	13.0		1.4			In 1.0 cc.	
"	Jan. 19, 1911.	Tap in laboratory.	5	2-e	2-e	*	23	64	20	44		.008	.072	.001	.32	3.5	14.0		.6			In 1.0 cc.	
"	Jan. 20, 1911.	Tap in laboratory.																				In 10.0 cc.	
"	Jan. 23, 1911.	Tap in laboratory.	5	2-e	2-e	*	30	66	30	36		.006	.058	.000	.00	3.0	15.0		.5			In 1.0 cc.	
"	Jan. 23, 1911.	Tap on Barr pump.	5	2-e	2-e	*	23	70	28	49		.008	.060	.000	.32	3.0	15.0		19.4	.9		In 1.0 cc.	
"	Jan. 24, 1911.	Tap in laboratory.																				In 0.1 cc.	
"	Feb. 3, 1911.	Tap: pumping station.	5	2-e	3-e	*	41	25	16		.004	.074	.004	.040	3.5	17.0		.4				In 0.1 cc.	
"	Feb. 6, 1911.	Tap on Barr pump.																				In 0.1 cc.	
"	Feb. 16, 1911.	Tap at pump.																				In 1.0 cc.	
"	Feb. 16, 1911.	Tap in laboratory.																				In 1.0 cc.	
"	Feb. 17, 1911.	Tap in laboratory.	5	2-e	3-e	*	70	24	46		.044	.096	.002	.32	2.5	22.0		.3				In 1.0 cc.	
"	Feb. 23, 1911.	Tap on pump.		1-e	2-e	*	79	33	48		.024	.064	.002	.32	4.0	19.0		.5				In 10.0 cc.	
"	Feb. 23, 1911.	Tap in laboratory.	15	2-e	2-e	*	74	22	52		.028	.064	.004	.32	3.5	23.0		.1				In 10.0 cc.	
"	Mar. 3, 1911.	Tap in laboratory.	10	2-m	2-m	0	163	128	35		.024	.056	.004	.28	3.5	35.0		.4				In 10.0 cc.	
"	Mar. 3, 1911.	Tap on pump.	10	2-m	2-m	0	72	24	48		.008	.060	.003	.24	3.0	25.0		.4				In 0.1 cc.	
"	Mar. 9, 1911.	Tap in laboratory.	0	1-e	1-e	0	72	24	48		.024	.056	.003	.24	3.0	23.0		33.8				In 10.0 cc.	
"	Mar. 9, 1911.	Tap on pump.	10	1-e	1-e	0	72	23	47		.034	.070	.004	.18	3.0	25.0		37.7				In 10.0 cc.	
"	Mar. 17, 1911.	Tap on pump.	10	1-e	1-e	0	20	70	40	30		.023	.110	.003	.36	3.0	19.0		26.0			Absent.	
"	Mar. 17, 1911.	Tap in laboratory.	0	1-e	1-e	*	87	23	64		.026	.060	.004	.36	3.0	23.0		28.6				Absent.	
"	Mar. 23, 1911.	Tap: pumping station.	0	2-e	2-e	0	228	83	130		.040	.094	.000	.24	2.5	19.0						Absent.	
"	Mar. 23, 1911.	Tap in laboratory.	1	1-e	1-e	0	72	37	35		.024	.080	.000	.28	2.5	19.0						Absent.	
"	Mar. 30, 1911.	Tap in laboratory.	0	1-m	1-m	20	79	22	37		.001	.094	.002	.16	2.5	13.6		24.7	.4			Absent.	
"	Mar. 31, 1911.	Tap on pump.	0	1-e	1-e	25	70	5	65		.088	.156	.001	.16	2.5	11.0		1.2				In 1.0 cc.	

* Slight.

CONTINUOUS RECORD OF ANALYSES OF WATER FROM THE PUBLIC SUPPLIES OF NEW JERSEY—RESULTS IN PARTS PER MILLION EXCEPT WHERE OTHERWISE STATED—Continued.

TOWN.	DATE.	SOURCE OF SAMPLE.	Color.	Oder, Col.	Oder, Hot.	Turbidity.	Total Solids.	Loss on Ignition.	Mineral Residue.	Appearance on Ignition.	NITROGEN AS						Iron.	Bacteria per cc. 20° C.	Bacteria per cc. 47° C.	Red Colonies per cc. 37° C.	B. Coll.
											Free Ammonia.	Albuminoid Ammonia.	Nitrites.	Nitrates.	Chlorine.	Alkalinity.						Hardness, Total.
Trenton	Apr. 7, 1911	Tap on pump	0	1-e	1-e	* 30	82	35	47		.018	.088	.000	.12	3.0	22.8					In 0.1 cc.
"	Apr. 28, 1911	Tap in laboratory	0	1-e	1-e		82	43	9				.000	.08	2.5	10.0					In 1.0 cc.
"	Apr. 28, 1911	Tap on pump	0	1-e	1-e		40	32	16		.012	.082	.003	.20	2.5	18.0					In 0.1 cc.
"	May 4, 1911	Tap in laboratory	20	1-e	1-e	* 0	50	34	9				.001	.00	2.0	15.0					In 0.1 cc.
"	May 5, 1911	Tap on pump	10	1-e	1-e		58	18	40				.002	.12	2.5	18.0					In 0.1 cc.
"	May 9, 1911	Tap on new pump	10	1-e	1-e	*	62	18	44				.002	.12	2.5	21.0					In 0.1 cc.
"	May 18, 1911	Tap in laboratory	10	1-e	1-e	*	90	74	16		.030	.078	.003	.12	2.5	25.0					In 10.0 cc.
"	May 18, 1911	Tap on pump	0	2-e	2-e	*	67	56	11		.042	.104	.004	.12	2.5	24.0					In 0.1 cc.
"	June 2, 1911	Tap on pump	0	1-e	1-e	*	57	18	39		.036	.120	.002	.16	3.0	29.0					In 0.1 cc.
"	June 2, 1911	Tap in laboratory	0	1-e	1-e		48	9	39		.03	.104	.001	.12	3.0	27.0					In 0.1 cc.
"	June 8, 1911	Tap on pump	0	1-e	1-e		112	60	52		.056	.174	.003	.20	3.5	33.0					In 1.0 cc.
"	June 8, 1911	Tap in laboratory	0	1-e	2-e		31	10	21		.034	.100	.002	.28	3.5	34.0					In 1.0 cc.
"	June 14, 1911	Tap in laboratory	0	1-e	2-e		30	125	20	105		.036	.090	.002	.12	2.5	28.0				In 0.1 cc.
"	June 14, 1911	Tap on pump	0	1-e	1-e		300	202	27	175		.048	.1	.002	.32	2.0	14.0				In 0.1 cc.
"	June 23, 1911	Tap on pump	0	0	0		35	80	20		.008	.090	.002	.08	2.5	23.0					In 0.1 cc.
"	June 23, 1911	Tap in laboratory	0	0	0	*	90	10	80		.012	.080	.000	.20	2.5	21.0					In 0.1 cc.
"	June 28, 1911	Tap in laboratory	30	1-e	1-e	*	68	18	50		.020	.078	.000	.12	3.5	18.0					In 1.0 cc.
"	June 28, 1911	Tap on pump	20	1-e	1-e	*	83	37	45		.026	.080	.000	.12	3.5	22.0					In 1.0 cc.
"	June 28, 1911	Tap on pump	0	† 2	† 2	*	40	123	43	80		.038	.252	.003	.16	4.0	35.0				In 1.0 cc.
"	July 14, 1911	Tap in laboratory	0	1-e	1-e		25	145	57	88		.012	.092	.000	.16	4.5	34.0				In 0.1 cc.
"	July 20, 1911	Tap on pump	0	0	0		109	18	91		.008	.108	.000	.12	4.5	30.0					In 1.0 cc.
"	July 20, 1911	Tap in laboratory	10	1-e	1-e	*	88	23	35		.034	.070	.001	.12	4.0	35.0					In 0.1 cc.
"	July 27, 1911	Tap in laboratory	15	1-e	1-e	*	118	51	67		.022	.080	.005	.10	4.0	33.0					In 0.1 cc.
"	July 27, 1911	Tap on pump	20	1-e	1-e		20	68	19	49		.000	.124	.015	.08	5.0	35.0				In 0.1 cc.
"	Aug. 23, 1911	Tap in laboratory	0	2-e	2-e		25	107	23	84		.022	.104	.004	.08	5.0	33.0				In 0.1 cc.
"	Aug. 24, 1911	Tap on new pump	0	2-e	2-e		25	107	23	84		.022	.104	.004	.08	5.0	33.0				In 0.1 cc.
"	Aug. 30, 1911	Tap in laboratory	0	1-e	1-e	*	109	18	91		.016	.092	.001	.40	5.5						In 1.0 cc.
"	Aug. 31, 1911	Tap in laboratory	0	1-e	1-e	*	30	60	21	39		.010	.094	.001	.28	5.5	44.0				In 1.0 cc.
"	Sept. 11, 1911	Tap in laboratory	0	1-e	1-e		30	85	13	72		.028	.084	.000	.28	4.0	27.0				In 0.1 cc.
"	Sept. 18, 1911	Tap in laboratory	0	1-e	1-e		77	16	61		.022	.112	.000	.20	3.5	24.0					In 1.0 cc.
"	Sept. 19, 1911	Tap in laboratory	0	1-e	1-e		30	83	24	59		.024	.090	.001	.20	4.0	25.0				In 0.1 cc.
"	Sept. 20, 1911	Tap on pump	0	1-e	1-e		30	83	24	59		.024	.090	.001	.20	4.0	25.0				In 0.1 cc.
"	Sept. 20, 1911	Tap in laboratory	0	1-e	1-e		30	83	24	59		.024	.090	.001	.20	4.0	25.0				In 0.1 cc.
"	Sept. 21, 1911	Tap in laboratory	0	1-e	1-e		30	83	24	59		.024	.090	.001	.20	4.0	25.0				In 0.1 cc.
"	Sept. 23, 1911	Tap in laboratory	0	1-e	1-e		30	83	24	59		.024	.090	.001	.20	4.0	25.0				In 0.1 cc.
"	Sept. 25, 1911	Tap in laboratory	0	1-e	1-e		30	83	24	59		.024	.090	.001	.20	4.0	25.0				In 0.1 cc.
"	Sept. 27, 1911	Tap in laboratory	0	1-e	1-e		30	83	24	59		.024	.090	.001	.20	4.0	25.0				In 0.1 cc.
"	Sept. 28, 1911	Tap in laboratory	0	1-e	1-e		30	83	24	59		.024	.090	.001	.20	4.0	25.0				In 0.1 cc.
"	Sept. 29, 1911	Tap in laboratory	0	1-e	1-e		30	83	24	59		.024	.090	.001	.20	4.0	25.0				In 0.1 cc.
"	Sept. 30, 1911	Tap in laboratory	0	1-e	1-e		30	83	24	59		.024	.090	.001	.20	4.0	25.0				In 0.1 cc.
"	Oct. 2, 1911	Tap in laboratory	0	1-e	1-e		30	83	24	59		.024	.090	.001	.20	4.0	25.0				In 0.1 cc.
"	Oct. 4, 1911	Tap in laboratory	0	1-e	1-e		30	83	24	59		.024	.090	.001	.20	4.0	25.0				In 0.1 cc.
"	Oct. 5, 1911	Tap in laboratory	0	1-e	1-e		30	83	24	59		.024	.090	.001	.20	4.0	25.0				In 0.1 cc.
"	Oct. 6, 1911	Tap in laboratory	0	1-e	1-e		30	83	24	59		.024	.090	.001	.20	4.0	25.0				In 0.1 cc.
"	Oct. 7, 1911	Tap in laboratory	0	1-e	1-e		30	83	24	59		.024	.090	.001	.20	4.0	25.0				In 0.1 cc.
"	Oct. 23, 1911	Tap in laboratory	0	1-e	1-e		30	83	24	59		.024	.090	.001	.20	4.0	25.0				In 0.1 cc.
"	Oct. 23, 1911	Tap on pump	0	1-e	1-e		30	83	24	59		.024	.090	.001	.20	4.0	25.0				In 0.1 cc.
"	Oct. 26, 1911	Tap in laboratory	0	1-e	1-e		30	83	24	59		.024	.090	.001	.20	4.0	25.0				In 0.1 cc.
"	Oct. 26, 1911	Tap in laboratory	0	1-e	1-e		30	83	24	59		.024	.090	.001	.20	4.0	25.0				In 0.1 cc.
"	Oct. 26, 1911	Tap in laboratory	0	1-e	1-e		30	83	24	59		.024	.090	.001	.20	4.0	25.0				In 0.1 cc.
"	Oct. 27, 1911	Tap in laboratory	0	1-e	1-e		30	83	24	59		.024	.090	.001	.20	4.0	25.0				In 0.1 cc.
"	Oct. 30, 1911	Tap in laboratory	0	1-e	1-e		30	83	24	59		.024	.090	.001	.20	4.0	25.0				In 0.1 cc.
"	Oct. 30, 1911	Tap in laboratory	0	1-e	1-e		30	83	24	59		.024	.090	.001	.20	4.0	25.0				In 0.1 cc.
"	Oct. 31, 1911	Tap in laboratory	30	1-e	1-e	*	80	33	48		.030	.114	.000	1.00	3.5	13.0					In 10.0 cc.
"	Oct. 31, 1911	Tap in laboratory	0	1-e	1-e		80	33	48		.030	.114	.000	1.00	3.5	13.0					In 10.0 cc.
"	Dec. 9, 1910	Tap in laboratory	0	1-e	1-e		51	23	18	Slight charring	.008	.020	.001	.00	6.5	0					In 1.0 cc.
Tuckerton	Jan. 18, 1911	Tap	50	2-v	2-v	*	43	15	28		.026	.064	.000	.24	7.0	0					Absent.
"	Apr. 21, 1911	Tap	90	2-v	2-v		63	20	3		.000	.042	.000	.00	6.0	0					Absent.
"	July 18, 1911	Tap	60	1-v	1-v		69	29	40		.000	.040	.000	.08	7.5	5.0	16.9				In 0.1 cc.
"	Oct. 8, 1911	Tap	150	2-v	2-v		45	10	35		.046	.092	.000	.00	4.5	0					Absent.
Ventnor City	Nov. 10, 1910	Tap	0	0	0		124	20	104	No change.	.052	.020	.000	.00	4.5	56.0					Absent.
"	Jan. 17, 1911	Tap	0	0	0		123	25	98		.010	.012	.000	.00	6.0	56.0					Absent.
"	Apr. 26, 1911	Tap	0	1-e	1-e		134	54	80		.094	.016	.004	.00	7.0	56.0					Absent.
"	July 6, 1911	Tap	0	1-e	1-e		144	26	118		.026	.018	.002	.00	11.0	56.0					Absent.
"	Oct. 12, 1911	Tap	0	0	0		110	30	80		.018	.032	.000	.00	8.0	39.0					Absent.
Vincetown	Nov. 21, 1910	Tap	80	2-v	3-v		46	26	20		.012	.100	.000	.00	2.5</						

CONTINUOUS RECORD OF ANALYSES OF WATER FROM THE SUPPLIES OF STATE INSTITUTIONS—RESULTS IN PARTS PER MILLION EXCEPT WHERE OTHERWISE STATED.

TOWN.	DATE.	INSTITUTION.	SOURCE OF SAMPLE.	Color.	Olor. Cold.	Olor. Hot.	Turbidity.	Total Solids.	Loss on Ignition.	Mineral Residue.	NITROGEN AS				Chlorine.	Alkalinity.	Hardness, Total.	Iron.	Bacteria per cc. 20° C.	Bacteria per cc. 87° C.	Red Colonies per cc. 87° C.	B. Coll.	
											Free Ammonia.	Albuminoid Ammonia.	Nitrates.	Nitrates.									
Borletown	Feb. 21, 1911.	Industrial School	Tap in kitchen of Administration building.	0	0	0	0	56	30	28	.008	.008	.000	2.40	4.0	2.0	.....	0.0	.....	.....	Absent.
Glen Gardner	Jan. 25, 1911.	New Jersey Sanatorium for Tuberculous Diseases.	Tap in kitchen of Administration building.	0	2-m	2-e	0	120	215	89	125	.122	.028	.012	0.20	59.0	31.0	.....	.....	.....	In 10.0 cc.
Glen Gardner	Mar. 22, 1911.	New Jersey Sanatorium for Tuberculous Diseases.	Tap in kitchen of Administration building.	0	2-m	2-m	0	50	196	91	105	.050	.022	.058	4.0	9.0	12.7	17.0	.....	.....	In 10.0 cc.
Glen Gardner	Mar. 27, 1911.	New Jersey Sanatorium for Tuberculous Diseases.	Tap in kitchen of Administration building.	0	0	0	0	35	19	16	.000	.014	.000	0.06	3.5	8.0	14.3	0.0	.....	.....	In 0.1 cc.
Glen Gardner	Aug. 24, 1911.	New Jersey Sanatorium for Tuberculous Diseases.	Driven well, 600 feet by 8 inches.	0	2-v	.....	150	.....	.....	.....	.082	.070	.003	0.12	5.5	.....	.....	.....	.....	In 0.1 cc.	
Glen Gardner	Aug. 23, 1911.	New Jersey Sanatorium for Tuberculous Diseases.	New driven well, 600 feet deep.	0	2-v	.....	200	.....	.....	.....	.070	.050	.030	0.28	5.5	.....	.....	.....	.....	Absent.	
Glen Gardner	Aug. 28, 1911.	New Jersey Sanatorium for Tuberculous Diseases.	Driven well, 600 feet deep.	0	2-v	.....	150	.....	.....	.....	.032	.038	.015	0.08	5.0	.....	.....	.....	.....	In 10.0 cc.	
Glen Gardner	Sept. 5, 1911.	New Jersey Sanatorium for Tuberculous Diseases.	Driven well, 600 feet deep.	0	1-v	.....	50	.....	.....	.....	.010	.038	.003	0.00	3.5	.....	.....	.....	.....	In 0.1 cc.	
Glen Gardner	Sept. 6, 1911.	New Jersey Sanatorium for Tuberculous Diseases.	Driven well, 600 feet deep.	0	2-v	.....	50	.....	.....	.....	.022	.022	.007	0.12	3.5	.....	.....	.....	.....	In 0.1 cc.	
Kearny	Feb. 14, 1911.	New Jersey Home for Disabled Soldiers.	Tap	0	0	0	0	219	44	175	.004	.028	.000	2.00	10.0	91.0	.....	0.1	.....	.....	Absent.
Kearny	June 18, 1911.	New Jersey Home for Disabled Soldiers.	Tap	0	2-e	2-e	*	236	79	157	.018	.022	.002	0.22	11.5	98.0	.....	0.1	.....	.....	In 10.0 cc.
Morris Plains	Feb. 20, 1911.	New Jersey State Hospital.	Tap in Main building.	0	2-v	2-v	*	54	20	94	.013	.054	.000	3.3	12.0	.....	0.3	.....	.....	In 10.0 cc.	
Morris Plains	Sept. 22, 1911.	New Jersey State Hospital.	Filtered water basin, garden reservoir.	0	0	0	0	.....	.....	.....	.058	.048	.004	0.08	4.5	15.0	.....	.....	.....	In 1.0 cc.	
Morris Plains	Sept. 22, 1911.	New Jersey State Hospital.	Intake reservoir	0	1-e	.....	.....	.....	.....	.....	.026	.034	.000	0.24	4.0	.....	.....	.....	.....	In 0.1 cc.	
Morris Plains	Sept. 22, 1911.	New Jersey State Hospital.	High service reservoir intake.	0	0	.....	.....	.....	.....	.....	.038	.070	.002	0.52	5.0	9.0	.....	.....	.....	In 10.0 cc.	
Morris Plains	Sept. 22, 1911.	New Jersey State Hospital.	Collecting reservoir for springs.	0	0	.....	.....	.....	.....	.....	.040	.038	.005	1.28	5.5	29.0	.....	.....	.....	In 0.1 cc.	
Morris Plains	Feb. 20, 1911.	New Jersey State Hospital.	Lower reservoir or ice pond.	0	0	.....	.....	.....	.....	.....	.050	.080	.007	0.60	5.0	22.0	.....	.....	.....	In 10.0 cc.	
Itahway	Feb. 10, 1911.	New Jersey Reformatory.	Driven well, 540 feet deep.	0	0	0	0	2,137	354	1,783	.036	.008	.000	0.00	43.0	153.0	768.0	.....	.....	.....	Absent.
Skillman	Nov. 5, 1910.	New Jersey State Village for Epileptics.	Raw water	50	2-e	3-e	*	123	29	94	.024	.290	.005	0.15	4.5	43.0	.....	0.4	60	12	In 1.0 cc.	
Skillman	Nov. 5, 1910.	New Jersey State Village for Epileptics.	Filtered water	20	2-e	3-e	*	125	30	95	.028	.140	.001	0.16	4.5	52.0	.....	0.2	18	12	In 1.0 cc.	
Skillman	Feb. 10, 1911.	New Jersey State Village for Epileptics.	Pumping station, unfiltered.	0	0	0	0	115	57	58	.020	.096	.000	0.00	5.0	25.0	35.1	0.5	.....	.....	In 1.0 cc.
Skillman	Feb. 10, 1911.	New Jersey State Village for Epileptics.	Pumping station, filtered, coagulated.	0	0	0	0	75	23	52	.024	.052	.000	0.62	5.0	10.0	.....	0.0	.....	.....	In 10.0 cc.
Skillman	Mar. 3, 1911.	New Jersey State Village for Epileptics.	Filtered water	0	2-e	2-e	25	95	33	62	.....	.....	.002	0.15	5.0	13.0	.....	0.0	.....	.....	Absent.
Skillman	Mar. 3, 1911.	New Jersey State Village for Epileptics.	Coagulated, unfiltered	0	2-e	2-e	0	96	31	65	.....	.....	.002	0.18	5.0	12.0	.....	0.5	.....	.....	Absent.
Skillman	June 14, 1911.	New Jersey State Village for Epileptics.	Raw water from brook	0	0	0	25	.....	.....	.....	.036	.184	.009	2.00	4.5	.....	.....	404	165	.....	In 0.1 cc.
Skillman	June 14, 1911.	New Jersey State Village for Epileptics.	Filtered water	0	0	0	0	.....	.....	.....	.070	.088	.004	0.12	4.5	.....	.....	16	20	.....	In 10.0 cc.
Skillman	July 10, 1911.	New Jersey State Village for Epileptics.	Raw water at dam.	40	1-v	3-v	*	47	12	35	.025	.290	.000	0.00	5.0	53.0	.....	.....	.....	.....	In 0.1 cc.
Skillman	July 10, 1911.	New Jersey State Village for Epileptics.	Tap in engine room, filtered.	0	1-v	2-v	0	38	11	27	.064	.180	.003	0.00	5.0	59.0	.....	.....	.....	.....	In 1.0 cc.
Skillman	Sept. 12, 1911.	New Jersey State Village for Epileptics.	Pump at covered spring.	0	0	.....	40	.....	.....	.....	.018	.024	.000	1.80	5.0	.....	.....	.....	.....	.....	In 0.1 cc.
Skillman	Sept. 12, 1911.	New Jersey State Village for Epileptics.	Raw water, intake reservoir.	0	1-e	.....	.....	76	43	84	.068	.000	.003	0.28	5.5	31.0	.....	0.2	.....	.....	In 1.0 cc.
Skillman	Sept. 12, 1911.	New Jersey State Village for Epileptics.	Mixed filtered and artesian water.	0	2-e	.....	0	549	80	169	.022	.050	.002	0.32	8.0	7.0	.....	0.5	.....	.....	In 1.0 cc.
Skillman	Sept. 12, 1911.	New Jersey State Village for Epileptics.	Dug well, 12 feet deep.	0	↑	.....	40	.....	.....	.....	.110	.000	0.00	0.00	4.5	.....	.....	.....	.....	.....	In 0.1 cc.
Skillman	Sept. 12, 1911.	New Jersey State Village for Epileptics.	Pump at laundry spring.	0	↑	.....	0	.....	.....	.....	.032	.050	.002	1.20	5.0	.....	.....	.....	.....	.....	In 0.1 cc.
Skillman	Sept. 12, 1911.	New Jersey State Village for Epileptics.	Pine Knoll spring.	0	1-e	.....	0	.....	.....	.....	.030	.074	.000	4.00	8.5	73.0	.....	.....	.....	.....	In 0.1 cc.
Skillman	Sept. 12, 1911.	New Jersey State Village for Epileptics.	Tap in kitchen, Pine Knoll Cottage.	0	2-e	.....	0	850	125	725	.024	.042	.000	0.28	10.5	85.0	.....	0.5	.....	.....	In 1.0 cc.
Skillman	Sept. 12, 1911.	New Jersey State Village for Epileptics.	Tap in filter house, filtered.	0	2-e	.....	0	110	42	68	.044	.092	.004	0.28	5.5	29.0	.....	0.4	.....	.....	In 0.1 cc.
Skillman	Sept. 12, 1911.	New Jersey State Village for Epileptics.	Rock brook	0	2-e	.....	0	150	45	105	.020	.110	.003	0.20	5.5	26.0	.....	3.5	.....	.....	In 0.1 cc.
Skillman	Sept. 18, 1911.	New Jersey State Village for Epileptics.	Tap in Administration building.	0	1-e	.....	0	237	37	200	.006	.014	.000	2.80	8.5	136.0	.....	0.1	.....	.....	In 1.0 cc.
Skillman	Sept. 18, 1911.	New Jersey State Village for Epileptics.	Artesian well, 480 feet deep.	0	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Absent.
Skillman	Sept. 18, 1911.	New Jersey State Village for Epileptics.	Tap near filter, filtered.	0	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Absent.
Skillman	Sept. 18, 1911.	New Jersey State Village for Epileptics.	Intake reservoir	0	0	.....	0	.....	.....	.....	.006	.024	.000	2.80	8.0	133.0	.....	.....	.....	.....	In 6.1 cc.
Skillman	Sept. 19, 1911.	New Jersey State Village for Epileptics.	Tap, Meadowside Cottage.	0	0	.....	0	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	In 1.0 cc.
Skillman	Sept. 19, 1911.	New Jersey State Village for Epileptics.	Raw water, intake reservoir	0	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	In 1.0 cc.
Skillman	Sept. 19, 1911.	New Jersey State Village for Epileptics.	Tap near filter, filtered.	0	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	In 10.0 cc.
Skillman	Sept. 21, 1911.	New Jersey State Village for Epileptics.	Well at Meadowside Cottage.	0	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	In 0.1 cc.
Skillman	Sept. 21, 1911.	New Jersey State Village for Epileptics.	Tap in Garrison Cottage.	0	5	2	Absent.
Skillman	Sept. 21, 1911.	New Jersey State Village for Epileptics.	Tap in pumping station.	0	3	3	Absent.
Skillman	Sept. 21, 1911.	New Jersey State Village for Epileptics.	Tap near filter.	0	1	1	Absent.
Skillman	Sept. 21, 1911.	New Jersey State Village for Epileptics.	Raw water, intake reservoir.	0	61	3	In 0.1 cc.
Skillman	Sept. 28, 1911.	New Jersey State Village for Epileptics.	Tap near filter.	0	Absent.
Skillman	Sept. 28, 1911.	New Jersey State Village for Epileptics.	Pump well, raw water.	0	12	0	In 1.0 cc.
Skillman	Sept. 28, 1911.	New Jersey State Village for Epileptics.	Tap in office.	0	9	1	In 10.0 cc.
Skillman	Oct. 23, 1911.	New Jersey State Village for Epileptics.	Raw water, reservoir.	0	In 0.1 cc.
Skillman	Oct. 23, 1911.	New Jersey State Village for Epileptics.	Tap in pump house, filtered.	0	In 0.1 cc.
Trenton	Jan. 31, 1911.	New Jersey State Home for Girls.	Tap in Administration building.	0	0	0	0	140	80	60	.040	.034	.000	1.80	13.5	47.0	0.2	In 10.0 cc.

* Slight. † Dis. ‡ Too high.

CONTINUOUS RECORD OF ANALYSES OF WATER FROM THE SUPPLIES OF STATE INSTITUTIONS—RESULTS IN PARTS PER MILLION EXCEPT WHERE OTHERWISE STATED—Continued.

TOWN.	DATE.	INSTITUTION.	SOURCE OF SAMPLE.	Color.	Olor, Cold.	Olor, Hot.	Turbidity.	Total Solids.	Loss on Ignition.	Mineral Residue.	NITROGEN AS				Chlorine.	Alkalinity.	Hardness, Total.	Iron.	Bacteria per cc. 20° C.	Bacteria per cc. 37° C.	Red Colouies per cc. 37° C.
											Free Ammonia.	Albuminoid Ammonia.	Nitrites.	Nitrates.							
Trenton	Jan. 31, 1911	New Jersey State School for Deaf.	Tap	15	1-e	2-e	*	66	20	46	.042	.060	.000	0.32	3.0	22.0		1.5		1	Abse
Trenton	Feb. 2, 1911	New Jersey State School for Deaf.	Tap in Dr. Green's office	5	1-e	2-e	*				.008	.070	.002	0.48	3.0						In 1
Trenton	Feb. 2, 1911	New Jersey State School for Deaf.	Filter in cellar, boarding hall.	5	1-e	2-e	*				.008	.070	.002	0.36	3.0						In 16
Trenton	Jan. 31, 1911	New Jersey State Prison.	Tap	60	1-e	2-e	*	71	25	46	.042	.060	.000	0.32	3.0	26.0		0.8			In 0.
Trenton	Jan. 31, 1911	New Jersey State Hospital.	Tap in machine shop.	0	0	0	0	157	40	97	.004	.012	.000	0.64	5.0	74.0		0.0			Abse
Trenton	June 14, 1911	New Jersey State Hospital.	Well No. 2	0	0	0	0				.028	.036	.000	1.00	6.5						Abse
Trenton	June 14, 1911	New Jersey State Hospital.	Well No. 3	0	0	0	0				.014	.034	.000	1.00	6.5						In 10
Trenton	June 14, 1911	New Jersey State Hospital.	Well No. 4	0	0	0	0				.048	.034	.005	0.60	6.5						Abse
Trenton	June 14, 1911	New Jersey State Hospital.	Well No. 5	0	0	0	0				.016	.030	.000	0.80	6.5						Abse
Trenton	June 14, 1911	New Jersey State Hospital.	Well No. 6	0	0	0	0				.014	.022	.000	0.88	7.0						Abse
Trenton	June 14, 1911	New Jersey State Hospital.	Tap in laboratory at asylum.	0	0	0	0				.018	.044	.001	0.72	6.5						Abse
Vineland	Feb. 27, 1911	New Jersey Training School for Feeble-minded Girls and Boys	Tap in pumping station.	0	0	0	0	41	23	18	.020	.016	.001	2.20	6.5	5.0		0.0			Abse
Vineland	Feb. 27, 1911	New Jersey Training School for Feeble-minded Girls and Boys	Tap	0	0	0	0				.016	.016	.000	2.00	6.5						Abse
Vineland	Feb. 27, 1911	New Jersey State Home for Feeble-minded Women.	Tap	0	0	0	0	41	23	18	.068	.068	.000	2.00	5.3	0.0		0.0			Abse
Vineland	Feb. 27, 1911	New Jersey State Home for Feeble-minded Women.	Tap	0	1-e	1-e	0				.066	.014	.000	2.00	7.5	0.0		0.0			Abse
Vineland	Feb. 27, 1911	New Jersey State Home for Disabled Soldiers.	Tap	0	0	0	0	38	16	22	.068	.010	.000	2.00	6.0	0.0		0.0			Abse
Vineland	June 27, 1911	New Jersey State Home for Disabled Soldiers.	Tap	0	1-e	1-e	0				.080	.018	.000	2.00	7.0						Abse

* Slight.

BUREAU OF VITAL STATISTICS.

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dairy water supplies - see p. 386 for remainder of title.

LION TABLE

TOWN.	DATE.	PROPRIETOR.	SOURCE OF SAMPLE.	Color.	Odor, Cold.	Odor, Hot.	Turbidity.	NITROGEN AS				Chlorine.	B. Coll.	
								Free Ammonia.	Ammonoid Ammonia.	Nitrates.	Nitrites.			
Burlington County— Bordentown.....	Mar. 9, 1911.....	Garret Bucklew.....	Dug well, 45 feet deep.....	0	0	0	0	.072	.080	.018	20.00	80.0	Absent.	
Westampton.....	May 4, 1911.....	Robert Wright.....	Dug well, 40 feet deep.....	0	1-e	1-e	0	0	.005	9.00	8.0	Absent.		
Westham Township.....	Aug. 12, 1911.....	Robert E. Halnes.....	Dug well, 18 feet deep.....	0	2-0	.....	150	.100	.048	.010	2.80	123.0	Absent.
Camden County— Delaware.....	May 3, 1911.....	Paul Lippincott.....	Dug well, 22 feet deep.....	40	1-e	1-e	0	.....	.....	.014	12.00	63.0	In 0.1 cc.
Essex County— Narley Caldwell.....	Mar. 17, 1911.....	Harry Stelmanf.....	Dug well, about 50 feet deep.....	0	0	0	0	.022	.052	.003	15.00	30.0	Absent.	
West Caldwell.....	June 20, 1911.....	J. Flett.....	Dug well, 25 feet deep.....	0	1-e	1-e	0	.010	.028	.001	3.00	7.0	In 10.0 cc.	
Mercer County— Lawrence.....	June 22, 1911.....	Willard Atkinson.....	Between well, 60 feet deep.....	0	0	0	0	.038	.044	.012	3.00	22.5	In 10.0 cc.	
West Windsor.....	Apr. 17, 1911.....	J. W. Pierce.....	Dug well, 35 feet deep.....	0	1-1	1-1	0	.016	.030	.001	5.20	27.5	Absent.	
Middlesex County— New Brunswick.....	Apr. 12, 1911.....	Mrs. Jacob Johnson.....	Dug well, 30 feet deep.....	0	0	0	0	.022	.012	.006	9.20	52.0	In 10.0 cc.	
Perth Amboy.....	Dec. 29, 1910.....	Barcane Polman.....	Dug well, 13 feet deep.....	0	2-m	2-m	0	0	.104	.032	9.00	87.5	In 1.0 cc.	
Woodbridge.....	Dec. 29, 1910.....	Isaac Flood.....	Dug well, 13 feet deep.....	15	0	0	0	.008	.080	.000	24.00	87.0	In 0.1 cc.	
Monmouth County— Wall Township.....	Apr. 28, 1911.....	Mrs. Phoebe Frazee.....	Dug well, 32 feet deep.....	0	1-e	1-e	0	.016	.042	.000	2.40	22.0	Absent.	
Morris County— Rockaway.....	Mar. 14, 1911.....	T. Poulas.....	Dug well.....	0	0	0	0	.030	.040	.001	2.40	4.0	Absent.	
Pine Brook.....	June 20, 1911.....	E. L. Fenden.....	Dug well.....	0	0	0	0	.006	.024	.000	2.80	4.5	In 1.0 cc.	
Passaic County— Hudson.....	Mar. 22, 1911.....	S. Vigianno.....	Dug well, 50 feet deep.....	0	0	0	0	*	.020	.005	24.00	33.0	In 1.0 cc.	
Preknass.....	Sept. 4, 1911.....	John and Wolf Levy.....	Driven well.....	0	0	0	0	.050	.054	.003	2.80	70.0	In 10.0 cc.	
Wayne.....	Mar. 27, 1911.....	Levy Brothers.....	Dug well, 30 feet deep.....	0	0	0	0	0	.114	.008	.017	25.00	52.0	In 10.0 cc.
Wayne.....	Mar. 27, 1911.....	Levy Brothers.....	Dug well, 25 feet deep.....	0	0	0	0	.038	.040	.001	32.00	66.0	In 10.0 cc.	
Somerset County— Bridgewater.....	Sept. 13, 1911.....	George Hough.....	Dug well, 65 feet deep.....	0	0	0	0	0	.002	.010	.000	2.80	7.0	Absent.
Sussex County— Sussex.....	July 11, 1911.....	Walter W. Treasworth.....	Dug well, 25 feet deep.....	0	0	0	0	*	.020	.002	.000	1.00	4.5	In 0.1 cc.
Union County— Linden.....	Feb. 17, 1911.....	Albert Wosmack.....	Driven well, 75 feet deep.....	0	0	0	0	.004	.020	.008	4.0	15.5	Absent.	

* Slight. † Too high.

CONTINUOUS RECORD OF ANALYSES OF WATER FROM THE SUPPLIES OF CREAMERIES—RESULTS IN PARTS PER MILLION EXCEPT WHERE OTHERWISE STATED.

TOWN.	DATE.	PROPRIETOR.	SOURCE OF SAMPLE.	Color.	Odor, Cold.	Odor, Hot.	Turbidity.	Free Ammonia.	Albuminoid Ammonia.	Nitrites.	Nitrates.	Chlorine.	B. Coll.
Franklin County— Hale Richfield	Dec. 14, 1910.	Abel Ralmer	Dug well, 40 feet deep	0	0	0	0	.000	.052	.000	7.20	16.0	10.0 cc.
	Dec. 14, 1910.	John G. Sprattier	Dug well, 40 feet deep	0	0	0	40	.008	.119	.013	18.00	23.5	1.0 cc.
	Mar. 4, 1911.	John Q. Davis	Driven wells, 90 to 110 feet deep	0	0	0	80	.008	.020	.000	.00177	0	10.0 cc.
Salem County— Salem Sharptown Sharptown	Apr. 12, 1911.	William Richman	Driven well, 16 feet deep	0	0	1-s	140	.024	.024	.000	.00	3.0	Absent.
	Apr. 12, 1911.	William Richman	Driven well, 160 feet deep	0	0	0	0	.011	.041	.000	.00	3.0	Absent.

* Offensive.

Report of the Bureau of Vital Statistics.

DAVID S. SOUTH, *State Registrar.*

The tables found in the report of the Bureau of Vital Statistics for the present year are comparatively the same as in previous years; however, the classification of causes of deaths, it will be noticed, varies from those contained in previous reports, for the reason that this department adopted the international classification of causes of death revised by the international commission appointed for that purpose at the session held in Paris, France, July 1st to 3d, 1909. The sole purpose of the revised classification is to exhibit a list of uniform and comparable titles of diseases or groups of diseases, and it is the intention of the international commission above mentioned to revise the same every ten years.

The tables which follow show an increase in the number of births and deaths, and a decrease in the number of marriages which took place during the past year. The decrease in the number of marriages is explained by the fact that the marriage license law which was recently passed by the Legislature of this State has in a great measure prohibited persons from adjoining States coming to New Jersey and marrying.

MARRIAGES.

Since the marriage license law is the most recent act pertaining to this department, we think a brief resume of the effect of this law, and suggestions for its amendment, would be proper at this time. To all appearances the law is accomplishing the purpose for which it was enacted; however, there are some cities in the State where the marriage ceremony between non-residents is a

common practise, and only recently a case was brought to our attention where the parties interested contended that a justice of the peace married a certain couple some time during the night, and procured a license for the same the following day. Of course officials of this sort defeat the intent of the law, and therefore we have given careful study to certain defects in the act which we would recommend to the Legislature for consideration.

First, there should be some provision made for issuing a duplicate license in cases where the contracting parties desire to have both a civil and religious ceremony performed.

The law should also be more explicit in requiring both of the contracting parties to be present when the license is issued, and that both the said parties shall answer and swear to certain questions.

There should also be some provision for securing a license in case of the absence of the registrar or his deputy, where the license is to be procured, and power should also be given to the registrars and assessors to administer oaths to parties applying for a marriage license, and also to take affidavits of parents and guardians in cases of consent to the marriage of minors.

There should be an amendment requiring the identifying witness to be of legal age.

A penalty should be imposed in cases where registrars issue licenses illegally.

Finally, the most important amendment, and one which we think should be added at the earliest possible moment, is to require a certain time to elapse from the issuing of the license to the time when the marriage ceremony is to be performed. In our opinion this time should be not less than one day or more than three days.

We think with the above changes in the marriage license law the State of New Jersey will finally have solved the problem of runaway marriages.

BIRTHS.

It is gratifying to note an increase in the number of births now reported to this office. We think there is an increase of at least 10 per cent. over the previous year, and that at present

about 85 to 90 per cent. of all the births that take place in New Jersey are reported.

Prompt reporting of births is necessary for the reason that the total number of births in a municipality or State is the basis of that most important ratio known as infant mortality.

In a chart elsewhere in this report it is shown that the death-rate among children under five years of age has been gradually decreasing for the past five years, and the full measure of protection to infant life cannot be extended unless every birth that takes place is promptly reported. We would urge all registrars and assessors to give this attention. If any physician or midwife in their district habitually fails to report births, the registrar should secure the data in reference to the case and, present the same to the local board of health with recommendation that prosecution be ordered.

When the present law requiring births to be reported within five days became effective a few physicians made a protest, stating that the time was too short; however, to those who have given this matter special attention the conclusion is reached that the shorter the time which is allowed the better the returns which are made, consequently in 1909 the State Board of Health of New York secured an amendment to the law in that State requiring that all births be reported within thirty-six hours after the birth takes place, and in this respect we would say that in some foreign countries a birth must be reported within twelve to twenty-four hours.

To physicians who object to promptly reporting births we would add that the laws of New Jersey in giving them a license to practise medicine and safeguarding them in practising their profession has a right in return for this unusual protection to lawfully require them to promptly report all births, still-births and deaths occurring in their practise.

DEATHS.

Still further improvement in the registration of deaths in New Jersey will no doubt be accomplished providing the various registration States and cities throughout the country will agree to the presentation of certain uniform tables in regard to mortality

statistics. This important subject was under discussion at the meeting of the American Public Health Association in Havana, Cuba, in December, 1911; however, no data is available at present in reference to the recommendations made at that time.

A noticeable improvement is found in examining certificates of deaths for occupational statistics and it is hoped that with such additional data in regard to mortality by occupations, improved tabulations may be compiled by this department.

In order to bring the Bureau of Vital Statistics thoroughly up to date and have available all data in reference to each death that takes place in New Jersey, a tabulating machine, such as is used in the Bureau of the Census, Washington, D. C., should be made a part of the equipment of this office, and the proper help provided to operate the same. With such a machine at our disposal any number of facts in relation to any disease or combination of diseases in any part of the State would be available at short notice, and additional tables in reference to mortality statistics could be added to the reports of this department, which would greatly enhance the value of the same.

Table 1—Births, Marriages and Deaths by Counties, Cities, Boroughs and Townships for the five years ending December 31, 1910.

ATLANTIC COUNTY.

NAME OF PLACE.	BIRTHS.					MARRIAGES.					DEATHS.				
	YEARS.					YEARS.					YEARS.				
	1906	1907	1908	1909	1910	1906	1907	1908	1909	1910	1906	1907	1908	1909	1910
Abeacon	15	5	8	4	2	7	2	8	4	7	14	8	8	7	16
**Atlantic City	584	797	724	636	677	502	442	562	697	602	710	699	656	679	800
Ruena Vista	73	66	78	73	91	24	22	18	32	37	41	29	43	36	37
Brigantine	0	1	1	0	0	0	0	0	0	0	0	2	2	2	0
Egg Harbor City	57	65	60	62	56	20	23	28	19	27	24	43	34	36	40
Egg Harbor Township	23	14	23	27	12	6	12	6	7	7	18	26	22	23	22
Folsom Borough	0	5	5	5	5	0	3	2	3	0	2	0	0	2	1
Galloway	19	21	14	27	20	8	4	6	4	21	22	23	16	18	18
Hamilton Township	32	26	37	22	39	16	14	10	4	12	31	23	23	38	35
Hammonton	111	113	101	152	166	49	45	34	59	53	66	64	68	93	74
Linwood	8	0	0	7	14	1	0	0	3	6	8	4	0	10	1
Longport Borough	0	0	0	1	0	0	0	2	0	0	1	3	2	3	19
Margate City	2	0	0	2	0	0	0	0	0	0	2	1	1	3	6
Mullica	11	12	14	12	16	3	3	4	1	4	6	11	14	17	13
North Field City	9	11	11	9	8	0	0	1	1	2	25	27	26	27	27
Pleasantville	65	83	66	106	86	21	27	37	41	46	44	47	41	57	62
Port Republic City	3	3	4	4	3	2	6	3	4	5	2	5	3	8	7
Somers Point	7	9	9	7	10	7	10	7	2	4	1	4	11	11	3
Ventnor	1	1	1	2	4	0	0	1	0	1	0	1	0	10	13
Weymouth	12	11	10	10	17	0	0	7	2	4	4	7	8	7	10

* Marriage certificates received from County Clerk in which the places where the marriages were performed are not stated.

** The death-rate in summer resorts is calculated on the basis of the resident population, whereas the actual population is often several times larger, and on account of this floating population and the large number of invalids included in it, the death-rate is not a criterion of health conditions.

NOTE.—The marriage license law of 1910 went into effect on July 1st of that year, therefore the figures marked with a * in the following tables refer only to marriages which took place during the first six months of the year in question. Under the marriage license act which was in force prior to July 1st, 1910, non-residents of this state coming to New Jersey and marrying were required to go to the office of the County Clerk and procure a marriage license.

BERGEN COUNTY.

NAME OF PLACE.	BIRTHS.				MARRIAGES.				DEATHS.				
	YEARS.				YEARS.				YEARS.				
	1906	1907	1908	1909	1906	1907	1908	1909	1906	1907	1908	1909	
Allendale	9	9	15	14	10	6	2	6	3	6	8	13	13
Alpine Borough	2	6	8	7	2	1	6	3	2	2	4	7	5
Bergenfield	29	83	52	38	5	11	8	17	4	10	10	13	15
Bogota	19	26	19	22	25	2	6	9	6	9	6	7	24
Carlstadt	74	79	86	96	110	26	24	42	26	30	40	43	36
Clintside Park	68	73	80	94	107	11	13	16	30	45	23	38	53
Closter Borough	23	20	18	20	21	7	6	7	10	5	10	10	12
Cresskill	16	14	10	13	16	1	2	2	5	3	14	14	9
Delford	21	13	13	17	18	4	2	8	3	5	10	9	7
Demarest Borough	5	3	10	5	9	3	1	4	2	3	6	10	5
Dumont	30	29	41	35	44	4	6	16	11	8	13	17	18
East Rutherford	76	71	72	83	110	21	15	21	33	45	46	52	54
Edgewater	27	41	59	55	57	12	10	44	31	21	37	34	34
Emerson	19	17	17	19	17	4	7	9	6	3	8	10	7
Englewood City	137	168	174	193	182	59	79	79	70	68	141	143	126
Englewood Cliffs	2	2	2	2	3	1	1	4	4	3	4	4	4
Fairview	54	66	69	118	114	5	2	9	5	7	15	25	18
Fort Lee	42	48	24	30	71	16	14	26	21	31	45	43	47
Franklin	28	24	31	32	35	10	9	11	12	9	19	22	17
Garfield	137	165	236	303	374	58	49	46	72	76	91	118	140
Glen Rock	12	19	16	11	17	1	1	4	15	10	3	16	10
Hackensack City	260	343	361	322	402	152	122	182	154	188	193	218	170
Harrington Park Borough	8	2	8	2	7	2	3	10	15	12	12	20	17
Hasbrouck Heights	30	22	24	24	24	3	10	3	10	15	12	20	17
Haworth Borough	9	6	10	8	7	1	1	2	2	6	3	5	5
Hilldale	12	10	17	16	19	4	3	5	5	6	9	7	13
Hoboken	51	54	16	14	17	14	17	10	2	48	38	24	25
Leonia	7	7	2	2	4	1	6	3	23	25	16	20	20
Little Ferry	38	68	43	45	40	6	1	10	8	9	9	0	8
Lodi Borough	76	61	100	104	126	18	31	12	27	34	32	44	41
Lodi Township	21	15	14	18	15	1	1	1	1	5	10	8	15
Maywood	19	23	14	21	20	1	3	4	10	4	9	10	15
Midland	21	18	25	25	21	5	9	7	13	9	13	17	14
Midland Park	54	46	54	39	49	9	7	14	5	14	23	20	27
Montvale	12	6	11	6	12	2	2	2	2	5	8	3	7
Monksville	1	1	1	1	1	1	1	1	1	1	1	1	1
North Arlington	15	14	7	7	12	2	1	2	2	4	8	5	4
Northvale	12	16	12	6	23	2	4	5	4	3	5	8	11
Norwood Borough	13	21	6	6	8	2	2	4	8	6	8	8	9
Oakland	1	3	2	6	8	1	1	2	2	3	3	3	4
Old Tappan	21	15	15	14	10	7	10	3	4	9	8	14	10
Orvil Township	50	35	51	78	108	10	10	11	23	35	44	38	43
Overpeck	22	25	33	23	33	7	4	8	6	8	6	6	6
Palisade	23	36	41	45	36	2	2	2	3	7	14	15	21
Park Ridge	34	28	21	32	24	4	8	6	10	15	19	20	20
Ramsey	6	2	22	4	18	52	9	9	7	8	8	27	31
Ridgefield Borough	4	10	3	3	0	0	1	1	2	2	1	4	6
Ridgefield Township	68	55	52	84	81	28	22	26	37	34	48	49	46
Ridgewood	19	12	12	9	15	7	4	0	1	6	5	4	3
Riverside	3	7	6	6	6	1	1	0	1	1	4	3	8
Rutherford	87	86	87	102	100	35	36	41	43	35	62	50	53
Saddle River Borough	6	3	11	5	5	6	5	2	2	3	4	3	13
Saddle River Township	62	43	25	49	60	4	5	4	2	7	43	31	30
Tenack	15	28	21	35	35	1	4	4	3	11	10	10	17
Tenafly	42	43	42	52	59	6	5	8	18	17	22	23	18
Union	42	63	64	96	121	9	8	8	2	33	37	53	56
Upper Saddle River Boro.	1	4	3	2	4	0	0	0	2	1	4	2	0
Wallington	6	2	3	3	3	0	1	0	1	5	2	0	2
Washington	26	31	32	32	37	10	7	17	28	12	15	21	18
Westwood	7	12	9	11	5	2	3	16	7	3	16	7	3
Woodcliff	17	35	26	26	29	4	4	4	1	5	9	8	10
Wood Ridge	4	2	4	4	2	2	2	1	1	5	9	8	10

* Marriage certificates received from County Clerk in which the places where the marriages were performed are not stated.

BURLINGTON COUNTY.

NAME OF PLACE.	BIRTHS.				MARRIAGES.				DEATHS.				
	YEARS.				YEARS.				YEARS.				
	1906	1907	1908	1909	1906	1907	1908	1909	1906	1907	1908	1909	
Bass River	7	2	10	10	9	5	3	6	6	5	1	7	9
Beverly City	30	46	57	40	51	18	23	26	19	26	59	53	48
Beverly Township	22	26	36	35	24	10	16	16	15	9	22	41	23
Bordentown City	60	65	64	74	66	52	38	42	47	38	70	63	71
Bordentown Township	1	5	6	7	3	1	1	1	1	9	6	9	4
Burlington City	117	129	127	130	153	56	100	82	74	89	146	153	134
Burlington Township	2	5	8	9	9	2	1	1	1	1	12	15	23
Chester	108	125	81	85	99	39	36	39	43	39	77	68	74
Chesterfield	20	11	16	8	13	15	5	5	1	6	29	9	16
Channamison	19	12	13	15	24	8	9	7	1	2	12	14	14
Delran	24	11	21	19	12	8	7	3	8	6	13	16	11
Eastampton	6	6	11	6	8	1	2	1	0	0	4	2	5
Evesham	20	27	29	34	31	3	4	4	6	6	16	13	19
Fieldsboro	7	8	6	9	7	2	7	7	1	7	8	9	11
Florence	50	94	89	92	84	6	11	19	12	17	31	43	31
Lumberton	19	18	17	24	14	5	4	5	5	7	20	19	22
Mansfield	11	7	15	22	17	4	4	6	6	11	16	18	27
Medford	26	29	41	35	38	10	13	18	10	15	33	59	38
Mount Laurel	30	36	28	33	25	4	2	2	3	3	13	18	26
New Hanover	15	8	12	9	10	3	3	7	9	6	12	21	24
Northampton	82	113	113	103	84	70	77	71	57	54	133	120	111
North Hanover Township	6	2	2	2	2	4	9	5	14	3	7	8	4
Palmyra	65	55	39	53	49	35	33	15	20	30	37	46	27
Pemberton Borough	10	10	10	17	15	13	11	18	10	12	13	14	11
Pemberton Township	5	5	8	7	5	9	6	2	2	3	4	4	7
Riverside	30	67	86	87	103	24	33	26	20	31	48	67	47
Riverton Borough	25	34	37	23	30	11	8	10	16	14	22	20	23
Shamong	1	1	1	5	0	6	3	2	2	4	7	10	3
Southampton	5	10	3	28	34	8	7	11	8	7	13	17	18
Springfield	3	9	14	6	10	11	1	1	1	0	11	17	18
Tabernacle	6	6	6	2	1	1	1	2	2	7	9	3	4
Washington	9	13	8	9	11	2	3	1	0	7	7	7	5
Westampton	7	6	8	6	5	2	1	2	4	1	4	1	10
Willingsboro	8	7	3	10	5	2	1	1	1	3	7	8	4
Woodland	7	12	16	12	11	1	3	4	0	4	2	4	13

* Marriage certificate received from County Clerk in which the place where the marriage was performed is not stated.

CAMDEN COUNTY.

NAME OF PLACE.	BIRTHS.					MARRIAGES.					DEATHS.				
	YEARS.					YEARS.					YEARS.				
	1906	1907	1908	1909	1910	1906	1907	1908	1909	1910	1906	1907	1908	1909	1910
Audubon Borough	4	11	22	18	29	2	.....	5	1	7	3	7	9	5	9
Berlin	.....	.....	.....	.....	30	.....	.....	.....	.....	.....	.....	.....	.....	.....	17
Camden City	1856	1643	1808	1909	2006	2831	2919	2708	2900	1985	1865	1806	1471	1480	1827
Centre	53	58	48	53	43	15	4	1	4	1	4	51	48	48	49
Chestlurst	8	7	6	10	1	.....	.....	.....	.....	0	2	4	3	5	6
Clementon	48	47	40	74	55	10	10	12	11	17	31	32	47	32	46
Collingswood	26	63	74	61	76	29	24	19	21	30	28	53	43	52	44
Gloucester City	192	181	219	201	159	94	87	78	73	99	153	167	172	162	147
Gloucester Township	42	48	42	37	42	13	20	16	31	15	85	101	120	92	111
Haddon	16	24	23	14	33	5	12	9	7	4	18	15	14	14	26
Haddonfield	46	56	62	60	56	30	25	30	25	17	31	49	44	51	55
Haddon Heights Borough	20	16	20	18	24	6	8	4	13	12	2	7	11	9	15
Merchantville Borough	24	29	38	24	33	33	36	30	23	24	16	38	17	26	.....
Oaklyn Borough	10	5	8	10	14	4	1	3	0	23	6	7	7	5	7
Pensauken	45	37	48	43	57	8	11	7	11	51	46	51	48	48	55
Voorhees	16	24	17	15	18	12	7	6	7	5	11	14	16	9	12
Waterford	55	68	75	79	47	24	18	20	9	42	34	40	36	33	.....
Winslow	23	34	41	51	72	10	14	4	7	10	33	38	36	38	48
Wood Lynne Borough	6	11	11	7	8	2	3	2	1	5	4	3	3	2	4

* Marriage certificates received from County Clerk in which the places where the marriages were performed are not stated.

CAPE MAY COUNTY.

NAME OF PLACE.	BIRTHS.					MARRIAGES.					DEATHS.				
	YEARS.					YEARS.					YEARS.				
	1906	1907	1908	1909	1910	1906	1907	1908	1909	1910	1906	1907	1908	1909	1910
Anglesea Borough	8	9	10	24	.....	3	1	.....	1	.....	17	5	13	0	0
Aralon	1	3	1	1	1	.....	1	1	.....	.....	.....	.....	.....	.....	3
Cape May City	38	37	27	20	28	27	30	33	18	23	42	50	32	20	42
Cape May Point	.....	.....	.....	0	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	0
Dennis	24	25	24	28	15	6	9	13	12	22	22	21	33	21	.....
Holly Beach Borough	32	25	45	23	43	7	9	16	15	25	17	17	17	29	27
Lower	27	16	12	16	28	10	4	9	4	19	5	7	20	24	.....
Middle	29	45	35	53	20	17	24	24	23	15	37	33	32	24	.....
North Wildwood Borough	.....	.....	.....	.....	17	.....	.....	.....	.....	.....	.....	.....	.....	.....	6
Ocean City	35	26	35	41	48	15	8	13	16	22	29	28	41	50	45
Sea Isle City	6	3	16	14	13	1	5	6	8	5	6	11	11	13	14
Upper	16	23	20	20	21	12	11	9	10	7	21	22	19	28	35
West Cape May	10	5	19	18	19	.....	3	1	7	4	8	9	8	15	12
Wildwood	23	7	14	15	14	13	11	8	4	13	9	6	13	7	13
Wildwood Crest	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	2
Woodbine	63	80	70	63	73	13	16	9	9	9	7	11	7	8	5

* Marriage certificates received from County Clerk in which the places where the marriages were performed are not stated.
 ** The death-rate in summer resorts is calculated on the basis of the resident population, whereas the actual population is often several times larger, and on account of this floating population and the large number of invalids included in it, the death-rate is not a criterion of health conditions.

CUMBERLAND COUNTY.

NAME OF PLACE.	BIRTHS.					MARRIAGES.					DEATHS.				
	YEARS.					YEARS.					YEARS.				
	1906	1907	1908	1909	1910	1906	1907	1908	1909	1910	1906	1907	1908	1909	1910
Bridgeton	223	213	207	163	236	118	116	111	113	131	185	239	190	210	216
Commercial	36	52	42	46	48	17	24	21	16	12	25	34	21	39	32
Deerfield	82	59	56	59	34	17	12	15	19	12	27	27	27	20	24
Downe	11	30	32	20	24	17	12	5	8	14	12	19	18	24	11
Fairfield	27	29	37	37	39	8	10	5	14	11	14	15	32	12	20
Greenwich	19	28	17	17	32	6	4	2	3	2	12	15	11	15	16
Hopewell	8	12	17	18	24	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Landis	91	69	79	68	61	15	10	8	8	6	94	69	81	66	63
Lawrence	29	18	29	33	31	15	7	15	5	14	15	24	19	26	.....
Maurice River	7	16	27	39	43	13	9	6	15	8	12	31	23	23	28
Millville City	281	291	266	289	287	106	129	94	105	89	166	174	137	151	149
Stow Creek	14	8	8	9	14	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Vineland	104	145	100	131	155	77	79	82	101	87	83	77	97	118	150

* Marriage certificates received from County Clerk in which the places where the marriages were performed are not stated.

ESSEX COUNTY.

NAME OF PLACE.	BIRTHS.					MARRIAGES.					DEATHS.				
	YEARS.					YEARS.					YEARS.				
	1906	1907	1908	1909	1910	1906	1907	1908	1909	1910	1906	1907	1908	1909	1910
Belleville	146	141	172	170	245	33	46	46	49	62	117	133	118	190	226
Bloomfield City	211	221	246	259	286	67	58	65	106	137	170	145	158	152	188
Caldwell Borough	26	21	39	49	36	13	12	9	17	19	32	25	38	23	39
Caldwell Township	5	4	8	8	5	3	3	6	0	4	7	10	21	10	5
Cedar Grove	26	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
East Orange City	489	490	505	589	600	183	168	145	188	230	298	297	278	322	370
Essex Falls	2	2	6	4	7	1	2	1	3	4	.....	.....	.....	.....	.....
Glen Ridge	35	21	32	42	46	10	9	11	19	13	26	25	16	24	34
Irvington	119	136	188	179	224	37	38	88	47	49	101	114	96	127	142
Livingston	19	23	6	21	20	8	6	4	1	40	.....	.....	.....	.....	.....
Millburn	59	61	58	66	69	12	11	12	11	26	35	36	40	36	35
Montclair City	369	410	449	450	456	140	133	156	156	157	261	291	235	277	324
Newark City	7829	8105	8613	8738	10023	3382	3660	3475	4148	3547	5736	5198	5516	5784	.....
North Caldwell Borough	3	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Nutley Borough	53	74	65	78	96	35	28	20	48	34	44	51	57	49	57
Orange City	811	813	830	854	839	190	243	244	263	280	539	513	525	447	525
Roseland Borough	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
South Orange Borough	92	79	77	79	101	28	56	33	45	55	65	45	65	47	66
South Orange Township	30	22	46	57	55	4	8	16	14	16	21	24	19	31	36
Verona Borough	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
West Caldwell Borough	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
West Orange City	178	190	220	253	250	50	20	34	41	45	86	95	106	116	95

* Marriage certificates received from County Clerk in which the places where the marriages were performed are not stated.

GLoucester County.

NAME OF PLACE.	BIRTHS.					MARRIAGES.					DEATHS.					
	YEARS.					YEARS.					YEARS.					
	1906	1907	1908	1909	1910	1906	1907	1908	1909	1910	1906	1907	1908	1909	1910	
Clayton	33	36	42	46	33	5	7	9	13	6	28	30	19	23	24	
Deptford	29	25	40	42	42	11	10	9	10	14	30	33	32	34	37	
East Greenwich	25	19	28	23	23	15	11	10	9	12	31	27	50	20	29	
Elk	12	9	15	12	8	13	1	4	5	1	11	17	7	8	3	
Franklin	43	46	35	35	44	13	9	5	10	15	24	27	34	43	37	
Glassboro	45	49	63	54	49	29	38	26	20	43	35	11	29	39	49	
Greenwich	17	12	13	14	19	4	3	3	7	5	14	14	4	13	6	
Harrison	21	21	30	22	20	4	3	3	7	5	14	14	4	13	6	
Logan	24	29	28	26	24	4	7	4	5	5	14	14	21	28	16	
Maina	19	22	30	26	23	2	11	11	8	9	13	19	20	22	18	
Monroe	27	24	38	35	44	6	21	13	13	19	25	35	32	33	31	43
National Park Borough	1	1	6	5	4	2	7	1	0	1	2	22	25	20	23	23
Paulsboro Borough	51	40	50	39	49	10	3	12	5	8	27	22	3	2	2	
Pitman Borough	9	19	24	25	48	14	13	17	21	13	14	16	20	26	23	
South Harrison	9	19	24	25	48	14	13	17	21	13	14	16	20	26	23	
Swedesboro	9	7	5	6	8	5	4	1	3	7	2	4	3	5	3	
Washington	17	18	38	30	28	11	15	17	19	19	29	26	28	34	14	
Wenonah	2	5	3	7	14	2	4	2	1	9	16	19	19	19	16	
West Deptford	39	32	36	32	34	13	14	14	9	11	24	40	24	32	33	
Woodbury	42	68	67	60	59	48	68	49	61	55	81	72	75	74	64	
Woolwich	17	23	25	13	25	2	.....	0	6	8	12	12	15	11	11

* Marriage certificates received from County Clerk in which the places where the marriages were performed are not stated.

HUDSON County.

NAME OF PLACE.	BIRTHS.					MARRIAGES.					DEATHS.				
	YEARS.					YEARS.					YEARS.				
	1906	1907	1908	1909	1910	1906	1907	1908	1909	1910	1906	1907	1908	1909	1910
Bayonne	1650	1668	1719	1721	1800	344	432	524	571	572	759	763	722	678	827
East Newark	29	29	35	47	51	3	10	9	8	21	36	42	45	39	29
Guttenburg	172	164	144	131	195	12	20	25	27	50	37	35	74	55	67
Harrison	272	224	293	298	324	117	123	127	125	143	235	284	223	140	237
Hoboken	1719	1797	1978	1728	1810	911	1136	2398	2822	2383	1431	1556	1266	1241	1329
Kearney	4408	4794	4993	3953	4681	2165	2371	4312	5011	4177	4607	4723	4428	4404	4407
Jersey City	257	326	317	356	347	74	103	95	121	123	248	213	237	207	276
North Bergen	342	347	350	321	360	97	63	81	92	79	173	193	195	178	212
Secaucus	38	49	53	32	32	.....	7	7	14	173	206	212	244	388	.....
Town of Union	495	496	467	429	614	231	222	276	341	334	287	291	294	277	252
Weehawken	143	149	155	147	149	21	50	40	72	53	130	141	105	125	174
West Hoboken	715	731	822	718	838	280	337	358	457	414	385	371	401	420	386
West New York	218	254	235	299	348	35	116	123	116	133	104	136	141	162	169

HUNTERDON County.

NAME OF PLACE.	BIRTHS.					MARRIAGES.					DEATHS.							
	YEARS.					YEARS.					YEARS.							
	1906	1907	1908	1909	1910	1906	1907	1908	1909	1910	1906	1907	1908	1909	1910			
Alexandria	7	15	9	9	19	4	2	3	5	4	18	14	14	10	13			
Bethlehem	10	16	20	8	21	1	.....	4	2	1	15	23	17	8	10			
Bloombury Borough	4	2	2	2	8	14	11	3	4	9	7	7	3	14	10			
Clinton Borough	3	.....	3	5	3	6	4	5	9	12	9	15	35	30	28	32	25	
Clinton Township	22	35	25	24	34	11	8	12	9	15	10	12	8	19	28	24	21	28
Delaware	19	21	28	23	31	8	5	10	12	8	19	28	24	21	28	.....	.....	.....
East Amwell	7	11	16	17	12	10	8	4	5	14	27	18	22	9	23	.....	.....	.....
Flemington	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Franklin	16	15	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Frenchtown	6	11	7	8	8	13	10	6	10	10	14	20	9	15	10	.....	.....	.....
Hampton	8	10	19	16	18	6	11	14	10	8	13	25	22	17	9	.....	.....	.....
High Bridge	31	27	23	20	24	11	11	11	12	8	30	32	18	16	31	.....	.....	.....
Holland	11	17	16	20	14	6	10	12	6	9	22	15	29	23	30	.....	.....	.....
Kilguswood	24	12	16	11	17	2	5	3	4	10	22	19	14	18	.....	.....	.....	.....
Lambertville	109	126	84	100	98	27	33	34	31	34	80	78	51	72	57	.....	.....	.....
Lebanon	19	23	33	32	23	14	15	11	14	12	27	36	19	41	31	.....	.....	.....
Maritan	36	51	41	67	54	26	20	24	21	10	55	52	64	36	33	.....	.....	.....
Readington	28	40	81	43	31	11	20	7	22	18	36	41	30	40	38	.....	.....	.....
Stockton	13	14	3	12	16	3	4	3	3	2	7	13	15	12	16	.....	.....	.....
Tewksbury	32	17	21	19	26	15	13	10	12	14	21	26	24	22	22	.....	.....	.....
Union	16	12	23	5	13	4	3	3	2	7	13	15	12	16	16	.....	.....	.....
West Amwell	13	18	11	10	13	2	1	1	5	8	13	5	7	10	10	.....	.....	.....

* Marriage certificates received from County Clerk in which the places where the marriages were performed are not stated.

MERCER County.

NAME OF PLACE.	BIRTHS.					MARRIAGES.					DEATHS.							
	YEARS.					YEARS.					YEARS.							
	1906	1907	1908	1909	1910	1906	1907	1908	1909	1910	1906	1907	1908	1909	1910			
East Windsor	13	8	10	20	15	.....	1	1	2	4	10	18	13	8	13		
Ewing	14	3	15	12	19	11	5	3	4	4	8	18	28	16	24			
Hamilton	37	43	58	72	89	26	30	19	28	24	12	43	25	24	21	32		
Hightstown	33	12	23	25	33	17	19	32	24	12	43	25	24	21	32			
Hopewell Borough	24	34	23	14	15	15	4	14	17	13	13	18	22	14	16			
Hopewell Township	31	17	18	27	38	5	14	6	15	13	31	32	44	43	52			
Lawrence	27	31	26	30	38	8	10	8	6	15	20	28	25	26	26			
Pennington Borough
Princeton Borough	78	88	106	78	82	49	49	35	43	51	38	63	104	61	78
Princeton Township	6	15	9	15	8
Trenton	1150	1088	1139	1375	1568	954	984	865	965	1093	1493	1599	1625	1661	1909
Washington	9	14	17	18	13	5	4	5	8	2	12	16	17	14	10
West Windsor	9	28	19	18	21	5	2	7	5	3	11	12	13	10	17

* Marriage certificates received from County Clerk in which the places where the marriages were performed are not stated.

MIDDLESEX COUNTY.

NAME OF PLACE.	BIRTHS.					MARRIAGES.					DEATHS.				
	YEARS.					YEARS.					YEARS.				
	1906	1907	1908	1909	1910	1906	1907	1908	1909	1910	1906	1907	1908	1909	1910
Cranbury	16	22	30	31	24	8	7	11	16	15	26	23	38	15	20
Dunellen	21	29	40	35	44	8	9	9	13	6	19	14	31	16	28
East Brunswick	33	17	20	22	18	7	13	9	7	6	32	30	18	13	21
Helmetta	2	10	7	3	9	2	5	2	0	0	1	5	1	1	3
Highland Park Borough	6	11	11	22	36	5	3	8	3	5	13	16	8	11	14
Jamesburg	28	12	28	25	17	18	14	22	11	13	5	5	8	12	14
Madison	5	18	30	22	26	1	1	0	2	10	8	12	18	20	20
Mietuchen	29	31	27	35	36	16	14	22	18	13	22	26	26	28	32
Milltown	15	19	26	31	45	11	8	14	13	14	11	17	20	12	15
Monroe	15	16	11	12	20	5	12	6	8	4	11	13	9	7	17
New Brunswick	299	375	426	491	537	309	362	336	338	357	422	468	454	487	496
North Brunswick	5	12	11	11	6	2	2	2	2	0	3	13	9	7	9
Perth Amboy	346	447	427	696	1038	419	492	358	432	474	355	339	355	423	507
Piscataway	29	52	56	43	60	6	10	8	1	17	36	46	37	38	51
Raritan	46	9	17	22	18	12	8	3	3	3	48	46	37	23	28
Rosevelt Borough	29	115	157	135	171	1	19	35	45	50	9	72	61	56	90
Sayreville	187	168	190	171	211	30	28	17	30	21	52	65	50	52	45
South Amboy	60	52	71	150	162	15	55	27	53	65	137	105	90	94	108
South Brunswick	26	39	27	50	41	7	9	13	10	11	36	44	32	24	42
South River	107	80	134	124	147	86	53	32	33	109	76	69	60	68	52
Spottswood Borough				4	9				3					11	5
Woodbridge	83	87	107	134	182	37	30	30	42	49	123	100	103	96	121

MONMOUTH COUNTY.

NAME OF PLACE.	BIRTHS.					MARRIAGES.					DEATHS.				
	YEARS.					YEARS.					YEARS.				
	1906	1907	1908	1909	1910	1906	1907	1908	1909	1910	1906	1907	1908	1909	1910
Allenhurst	2	11	2	6	10	.....	3	2	6	.....	4	9	9	4	5
Allentown	6	1	1	5	3	.....	6	5	9	2	14	10	7	15	9
*Asbury Park	90	166	174	185	189	87	123	146	142	116	131	140	157	164	70
Atlantic	8	4	1	6	6	.....	7	7	7	7	16	13	12	3	17
Atlantic Highlands	29	16	27	23	35	6	14	18	14	17	28	21	19	18	23
Avon	4	2	12	7	11	7	10	8	5	5	7	15	11	3	11
Belmar	9	29	25	38	36	15	25	33	27	39	29	20	22	24	24
Bradley Beach Borough	11	4	18	32	33	6	1	14	24	21	13	13	20	24	22
Deal	2	2	6	6	4	4	4	4	4	4	4	4	5	4	3
Eatonstown	41	32	29	34	44	17	20	20	9	13	42	24	17	18	26
Englishtown	3	1	0	6	9	11	4	2	3	7	.....	1	.....	0	2
Farmingdale	6	9	13	9	15	7	11	14	9	6	10	6	8	5	5
Freehold Borough	68	77	84	61	136	44	42	41	.....	64	64	57	52	.....	.....
Freehold Township	109	12	16	26	35	47	.....	7	3	5	72	25	24	22	25
Highlands Borough	17	11	32	30	44	9	7	10	16	16	19	22	25	14	18
Holmdel	23	8	17	10	17	5	4	3	6	6	8	16	10	7	7
Howell	32	20	38	34	40	17	15	7	11	21	35	22	22	29	29
Keypoint Borough	.....	.....	57	70	.....	1	35	32	.....	44	61	.....	.....	.....	.....
*Long Branch	156	180	149	170	248	107	121	120	119	102	233	288	227	262	292
Manalapan	14	14	21	20	32	9	11	16	13	12	9	8	3	17	8
Manasquan	21	11	8	28	30	15	20	12	25	11	18	15	10	20	20
Marlboro	9	3	12	15	6	11	5	8	3	4	23	19	16	17	15
Matawan Borough	27	18	26	19	23	7	16	6	6	16	29	19	17	31	32
Matawan Township	11	6	22	11	18	2	2	.....	8	8	2	18	26	16	23
Middletown	66	54	86	78	73	31	30	18	27	23	51	77	82	89	90
Millstone	16	8	6	14	20	2	1	7	8	4	7	13	9	10	13
Monmouth Beach Borough	.....	6	2	5	3	.....	2	2	0	3	10	5	1	2	.....
Neptune Township	115	72	98	113	87	13	41	51	41	31	106	96	98	100	104
Neptune City Borough	7	5	6	12	8	2	1	2	0	3	7	5	2	2	2
Ocean	10	6	17	19	24	2	3	1	4	3	9	8	10	13	23
Raritan	91	78	80	46	39	37	44	39	57	44	30	11	67	99	67
Red Bank City	129	111	122	67	105	30	69	77	90	96	92	91	85	102	113
Rumson Borough	.....	17	24	29	31	.....	2	6	11	.....	15	15	23	.....	.....
Seabright	33	24	31	19	23	8	1	7	6	10	11	11	12	9	8
Shrewsbury	75	53	50	36	49	27	23	15	19	19	46	42	39	42	56
Spring Lake Borough	16	18	30	31	39	4	6	7	6	12	27	26	26	41	31
Upper Freehold	36	27	22	42	33	4	12	14	9	7	27	30	21	26	27
Wall	49	39	30	36	35	26	21	12	10	38	42	36	32	47	.....
West Long Branch	.....	4	12	8	.....	.....	.....	6	3	5	.....	.....	5	6	5

* Marriage certificates received from County Clerk in which the places where the marriages were performed are not stated.
 ** The death-rate in summer resorts is calculated on the basis of the resident population, whereas the actual population is often several times larger, and on account of this floating population and the large number of invalids included in it, the death-rate is not a criterion of health conditions.

MORRIS COUNTY.

NAME OF PLACE.	BIRTHS.					MARRIAGES.					DEATHS.					
	YEARS.					YEARS.					YEARS.					
	1906	1907	1908	1909	1910	1906	1907	1908	1909	1910	1906	1907	1908	1909	1910	
Bonnton City	55	82	86	95	100	29	39	44	42	0	68	77	73	71	70	
Bonnton Township	1	2	4	6	5	.....	1	2	36	1	.....	5	5	10	0
Butler	48	53	54	64	64	14	14	16	21	31	27	18	20	24	30	
Chatham Borough	39	25	43	45	43	9	14	15	15	14	19	17	22	18	26	
Chatham Township	4	11	3	4	9	.....	2	1	2	6	4	7	7	7	7
Chester	17	9	12	15	19	20	6	5	7	8	14	13	12	9	21	
Dover City	154	125	138	142	136	58	60	66	73	83	72	104	88	111	100	
Florham Park Borough	8	7	4	9	8	2	1	.....	0	0	2	4	7	13	10
Hanover	31	38	56	48	53	16	20	15	14	25	208	221	197	235	220	
Jefferson	7	8	14	12	9	7	4	4	0	24	15	16	12	19	19	
Madison	114	78	90	106	110	86	84	83	83	85	85	74	45	66	51	
Mendham Borough	.....	26	7	22	28	.....	11	1	8	9	.....	15	15	25	10
Mendham Township	26	.....	18	6	9	3	1	.....	3	1	15	.....	11	18	6
Montville	15	14	13	14	33	6	2	2	8	10	11	14	25	17	23	31
Morris Township	12	18	14	27	23	2	0	3	18	16	13	24	16	18	16
Morristown City	168	211	224	238	256	80	100	102	98	110	239	231	267	254	296	
Mount Arlington	1	.....	1	8	3	2	1	4	2	2	7	7	6	1	6
Mount Olive	11	12	7	21	15	11	5	7	2	5	9	13	15	13	12	
Netcong	12	8	19	34	40	2	2	6	11	9	13	8	15	23	21	
Passaic	23	40	27	36	38	10	15	4	22	13	28	31	33	20	39	
Poquanook	20	24	12	13	27	6	5	4	7	4	17	21	20	26	23	
Randolph	8	7	7	4	14	.....	4	4	5	5	26	36	34	43	46
Rockaway Borough	50	44	48	46	43	16	15	14	17	20	40	24	29	31	23	
Rockaway Township	82	57	46	41	53	7	10	18	9	14	51	96	65	63	57	
Roxbury	35	29	26	30	50	15	30	21	31	24	22	28	37	40	39	
Washington	18	18	34	22	45	15	13	16	12	15	18	29	20	27	29	
Wharton Borough	13	34	27	26	31	12	25	11	35	33	42	34	34	38	40	

* Marriage certificate received from County Clerk in which the place where the marriage was performed is not stated.

OCEAN COUNTY.

NAME OF PLACE.	BIRTHS.					MARRIAGES.					DEATHS.					
	YEARS.					YEARS.					YEARS.					
	1906	1907	1908	1909	1910	1906	1907	1908	1909	1910	1906	1907	1908	1909	1910	
Barnegat City	5	7	13	0	1	.....	15	5	0	0	2	1	17	0	0
Bay Head	1	10	1	4	10	3	1	1	8	1	1	1	4	2	3
Beach Haven	1	2	3	2	6	2	0	2	6	6	3	8	4	6
Berkeley	5	5	1	11	10	1	1	.....	0	1	10	1	6	5	6
Brick	31	25	23	14	35	10	16	9	6	7	32	30	13	29	23	
Dover	26	20	38	45	32	16	12	33	26	31	31	32	42	36	33	
Eagleswood	3	2	2	2	8	9	1	2	4	2	9	5	5	11	11	
Island Heights	.....	.....	2	0	5	1	5	6	0	2	.....	.....	5	6	6
Jackson	14	27	21	23	5	4	5	5	5	1	22	12	17	21	23	
Lacey	6	6	6	12	7	5	1	3	5	8	13	9	12	11	11	
Lakewood	66	66	97	79	81	41	47	48	53	37	60	82	74	64	82	
Lavalette	.....	.....	.....	0	1	.....	.....	.....	0	0	.....	.....	.....	0	0
Little Egg Harbor	3	.....	6	2	1	2	1	1	0	0	4	2	8	7	6
Long Beach	.....	.....	0	1	1	.....	.....	.....	0	0	2	.....	.....	1	6
Manchester	21	13	17	22	14	5	2	5	7	2	10	20	22	16	16	
Ocean	5	6	3	5	10	1	1	.....	3	2	2	2	7	2	5
Plumstead	20	13	16	19	18	14	13	7	8	10	22	20	21	25	22	
Point Pleasant Beach Borough	11	3	14	11	11	7	13	14	10	9	13	8	13	13	18	
Sea Side Park Borough	.....	1	.....	1	.....	.....	.....	.....	0	0	1	.....	4	4	7
Stafford	13	10	10	7	2	8	9	2	0	4	10	20	4	10	7	
Tuckerton	13	14	19	25	13	11	10	6	12	13	7	8	15	20	21	
Union	5	10	3	19	19	4	5	.....	6	12	7	2	3	12	17

* Marriage certificates received from County Clerk in which the places where the marriages were performed are not stated.

PASSAIC COUNTY.

NAME OF PLACE.	BIRTHS.					MARRIAGES.					DEATHS.				
	YEARS.					YEARS.					YEARS.				
	1906	1907	1908	1909	1910	1906	1907	1908	1909	1910	1906	1907	1908	1909	1910
Acquanahonk	131	202	237	254	324	27	15	56	44	54	83	71	99	118	139
Haledon Borough	31	20	19	24	39	12	9	7	16	20	27	26	14	18	28
Hawthorne	33	29	11	15	39	4	6	5	1	8	26	22	27	14	24
Little Falls	22	35	41	32	77	15	14	9	24	15	60	42	41	42	53
North Haledon	1	4	8	8	11	1	2	2	5	3	9	12	9	12	9
Passaic City	1536	1783	1827	1758	2043	924	1068	966	957	1267	633	808	782	783	819
Paterson	2026	2491	2634	2299	2557	993	1233	1160	1340	1037	1962	1839	1897	1888	1850
Pompton	57	65	90	77	78	24	25	26	21	35	32	48	50	32	49
Pompton Lakes Borough	21	7	10	16	17	8	8	14	11	15	7	7	4	6	5
Prospect Park Borough	10	15	9	16	30	3	4	11	17	17	10	16	15	24	23
Totowa	8	6	3	4	13	1	1	1	9	5	8	6	6	11	11
Wayne	16	8	9	17	19	8	11	4	9	7	26	17	19	15	31
West Milford	40	22	30	54	28	12	17	17	14	7	29	22	27	36	36

* Marriage certificates received from County Clerk in which the places where the marriages were performed are not stated.

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SALEM COUNTY.

NAME OF PLACE.	BIRTHS.					MARRIAGES.					DEATHS.				
	YEARS.					YEARS.					YEARS.				
	1906	1907	1908	1909	1910	1906	1907	1908	1909	1910	1906	1907	1908	1909	1910
Alloway	25	27	80	25	27	3	7	5	5	4	14	13	24	14	22
Elmer Borough	22	12	27	20	21	14	15	6	10	13	15	8	15	17	25
Elsinboro	4	7	10	5	2	1	1	0	0	2	1	2	3	5	5
Lower Alloways Creek	19	27	18	23	2	15	4	9	9	5	11	23	3	21	12
Lower Penns Neck	16	16	22	21	24	11	6	1	6	4	20	17	14	14	12
Mannington	14	15	21	21	23	10	8	8	8	5	83	28	26	17	21
Oldmans	16	25	23	31	13	15	10	10	15	7	16	17	9	12	22
Penns Grove Borough	43	27	48	16	38	15	28	17	13	19	20	28	27	19	27
Pittsgrove	29	38	43	37	43	4	10	7	5	5	31	20	24	19	22
Pittsgrove	33	33	48	33	30	9	6	4	5	19	10	13	23	15	15
Quinton	16	11	8	18	14	3	4	8	10	5	11	14	14	17	15
Salem City	90	78	80	108	118	73	59	50	100	75	111	109	118	91	94
Upper Penns Neck	13	18	10	46	9	1	1	1	1	1	1	1	1	1	1
Upper Pittsgrove	17	19	23	31	23	14	11	6	9	10	23	14	19	24	28
Woodstown	19	21	19	29	20	29	14	18	26	23	18	37	21	18	26

* Marriage certificates received from County Clerk in which the places where the marriages were performed are not stated.

SOMERSET COUNTY.

NAME OF PLACE.	BIRTHS.					MARRIAGES.					DEATHS.				
	YEARS.					YEARS.					YEARS.				
	1906	1907	1908	1909	1910	1906	1907	1908	1909	1910	1906	1907	1908	1909	1910
Bedminster	28	34	41	17	64	11	13	7	12	14	21	27	23	27	22
Bernards	50	57	43	81	81	31	25	28	40	28	42	33	50	49	55
Bound Brook Borough	85	87	84	47	93	43	37	46	49	44	53	43	58	51	50
Branchburg	13	13	16	12	13	5	7	3	1	7	10	6	5	15	10
Bridgewater	27	23	18	18	21	4	7	6	2	2	18	17	17	18	23
Franklin	37	33	42	23	28	26	16	10	8	13	35	31	37	40	40
Hillsborough	20	38	28	26	35	10	10	13	7	10	29	21	20	28	23
Milstone	1	1	1	1	2	1	6	1	0	5	3	1	4	7	4
Montgomery	14	14	23	12	10	11	9	2	7	5	17	25	24	19	30
North Plainfield City	83	84	109	91	106	26	26	37	42	47	57	57	54	65	78
North Plainfield Township	10	4	11	3	13	4	3	0	3	13	7	7	7	7	4
Raritan	53	45	33	22	72	18	17	23	17	26	58	48	22	43	38
Rocky Hill	9	19	8	17	16	4	4	1	4	2	5	5	9	8	8
Somerville	91	76	70	74	76	41	48	50	47	52	86	106	95	76	104
South Bound Brook	10	15	17	6	11	5	2	7	1	16	14	21	21	21	21
Warren	13	7	25	8	20	4	2	4	5	4	17	14	12	8	6

SUSSEX COUNTY.

NAME OF PLACE.	BIRTHS.					MARRIAGES.					DEATHS.				
	YEARS.					YEARS.					YEARS.				
	1906	1907	1908	1909	1910	1906	1907	1908	1909	1910	1906	1907	1908	1909	1910
Andover Borough	11	13	2	13	9	6	9	3	7	2	5	6	11	9	14
Andover Township	2	2	4	8	12	1	1	0	0	0	0	5	5	2	4
Branchville	13	9	9	4	9	7	6	2	0	0	12	13	8	11	12
Brooklyn	9	9	0	0	0	0	0	0	0	0	2	0	0	0	0
Byram	3	9	6	10	15	1	1	1	0	0	0	2	10	21	13
Frankford	13	10	6	9	12	4	1	1	4	1	14	10	6	10	12
Fredon	3	6	4	6	8	2	9	5	3	2	6	4	9	10	10
Green	9	10	7	12	10	1	7	1	2	1	2	5	5	8	6
Hampton	13	6	4	9	7	1	4	1	2	2	4	8	4	10	10
Harlyston	40	40	56	83	121	22	29	35	19	29	62	74	74	106	86
Hopatcong	2	2	1	0	2	1	1	1	1	2	2	3	3	4	4
Lafayette	7	13	14	16	7	6	11	8	7	6	9	9	14	11	7
Montague	10	5	7	3	8	2	2	2	6	6	10	27	18	14	7
Newton	60	74	75	61	71	28	47	48	52	47	47	43	48	58	59
Newton	17	18	17	16	18	5	9	2	6	1	12	11	18	14	4
Sparta	11	18	24	22	26	4	12	11	14	8	26	22	14	28	28
Stanhope Borough	11	8	25	28	23	10	10	6	18	15	14	13	17	12	14
Sussex Borough	18	14	15	14	6	7	6	4	7	14	9	10	5	14	14
Stillwater	28	11	20	17	15	21	10	18	17	25	16	27	20	16	20
Vernon	9	15	9	12	25	13	8	11	8	9	23	21	22	20	23
Walpack	4	2	5	3	5	1	1	1	1	1	5	5	4	5	3
Wantage	16	13	4	6	16	5	3	4	8	8	28	21	26	37	25

* Marriage certificate received from County Clerk in which the place where the marriage was performed is not stated.

TABLE 2.—SHOWING NUMBER OF DEATHS IN NEW JERSEY FROM EACH OF THE CLASSIFIED CAUSES, BY COUNTIES, FOR THE YEAR ENDING DECEMBER 31, 1910.

	Atlantic	Bergen	Burlington	Camden	Cape May	Cumberland	Essex	Gloucester	Hudson	Hunterdon	Merer.	Middlesex	Monmouth	Morris	Ocean	Passaic	Salem	Somerset	Sussex	Union	Warren	Total
Typhoid Fever.....	11	16	23	36	3	11	62	6	60	6	62	11	21	10	7	52	4	7	6	24	12	382
Dysentery.....	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	1
Relapsing Fever.....	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3
Malaria.....	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	25
Including Malaria Chochixia.....	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	25
Smallpox.....	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	36
Scarlet Fever.....	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	38
Whooping Cough.....	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	38
Diphtheria and Croup.....	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	40
Including Croup.....	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	41
Miliary Fever.....	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	42
Asiatic Cholera.....	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	43
Cholera Nostris.....	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	44
Dysentery.....	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	45
Yellow Fever.....	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	46
Leprosy.....	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	47
Erysipelas.....	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	48
Septicæmia.....	17	17	17	17	17	17	17	17	17	17	17	17	17	17	17	17	17	17	17	17	17	49
Purulent Infection and Septicæmia.....	18	18	18	18	18	18	18	18	18	18	18	18	18	18	18	18	18	18	18	18	18	50
Glanders.....	19	19	19	19	19	19	19	19	19	19	19	19	19	19	19	19	19	19	19	19	19	51
Anthrax.....	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	52
Rabies.....	21	21	21	21	21	21	21	21	21	21	21	21	21	21	21	21	21	21	21	21	21	53
Measles.....	22	22	22	22	22	22	22	22	22	22	22	22	22	22	22	22	22	22	22	22	22	54
Mycoses.....	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23	55
Follieæ.....	24	24	24	24	24	24	24	24	24	24	24	24	24	24	24	24	24	24	24	24	24	56
Beriberi.....	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	57
Other Malignant Tumors of the Lungs.....	26	26	26	26	26	26	26	26	26	26	26	26	26	26	26	26	26	26	26	26	26	58
Acute Miliary Tuberculosis.....	27	27	27	27	27	27	27	27	27	27	27	27	27	27	27	27	27	27	27	27	27	59
Tuberculous Meningitis.....	28	28	28	28	28	28	28	28	28	28	28	28	28	28	28	28	28	28	28	28	28	60
Abdominal Tuberculosis.....	29	29	29	29	29	29	29	29	29	29	29	29	29	29	29	29	29	29	29	29	29	61
Other Tuberculosis.....	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	62
Wounds.....	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	63
Wounds Due to Firearms.....	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	64
Wounds Due to Knives.....	33	33	33	33	33	33	33	33	33	33	33	33	33	33	33	33	33	33	33	33	33	65
Tuberculosis of Other Organs.....	34	34	34	34	34	34	34	34	34	34	34	34	34	34	34	34	34	34	34	34	34	66

TABLE 2.—SHOWING NUMBER OF DEATHS IN NEW JERSEY FROM EACH OF THE CLASSIFIED CAUSES, BY COUNTIES, FOR THE YEAR ENDING DECEMBER 31, 1910—Continued.

Disseminated Tuberculosis.....	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	67
Rickets.....	36	36	36	36	36	36	36	36	36	36	36	36	36	36	36	36	36	36	36	36	36	68
Syphilis.....	37	37	37	37	37	37	37	37	37	37	37	37	37	37	37	37	37	37	37	37	37	69
Other Venereal Diseases.....	38	38	38	38	38	38	38	38	38	38	38	38	38	38	38	38	38	38	38	38	38	70
Cancer and Other Malignant Tumors of the Buccal Cavity.....	39	1	2	3	6	1	2	15	19	2	4	6	6	4	2	9	3	4	4	4	4	90
Cancer and Other Malignant Tumors of the Stomach.....	40	29	34	27	45	6	17	37	15	174	21	37	28	42	20	6	18	10	42	15	4	884
Cancer and Other Malignant Tumors of the Peritoneum, Intestines, Rectum.....	41	5	8	6	5	6	48	4	24	2	12	8	8	7	4	16	1	5	8	17	4	108
Cancer and Other Malignant Tumors of the Female Genital Organs.....	42	8	12	10	19	7	6	97	11	70	3	13	12	10	11	14	3	10	5	19	5	350
Cancer and Other Malignant Tumors of the Skin.....	43	10	8	8	2	7	29	1	34	5	7	8	6	6	2	16	1	2	1	18	2	176
Cancer and Other Malignant Tumors of the Other Organs (except those of the Female Genital Organs).....	44	3	4	1	1	1	4	1	2	2	1	1	1	1	2	3	4	1	2	2	28	
Other Venereal Diseases.....	45	7	7	6	5	3	37	2	34	3	12	7	7	2	1	12	1	2	5	18	1	167
Acute Arterial Rheumatism.....	46	1	1	1	1	1	2	1	8	1	1	1	1	1	1	1	1	1	1	1	1	26
Chronic Rheumatism and Gout.....	47	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	54
Erysipelas.....	48	15	14	11	17	7	87	5	61	4	20	10	10	12	4	10	2	2	1	1	1	385
Exophthalmic Goitre.....	49	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	17
Leucæmia.....	50	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	88
Other General Diseases.....	51	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	39
Other Chronic (Acute or Chronic).....	52	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	89
Chronic Lead Poisoning.....	53	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	30
Other Chronic Poisoning.....	54	10	6	3	5	2	4	7	4	4	4	4	4	4	4	4	4	4	4	4	4	30
Other Chronic Poisoning.....	55	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	12
Encephalitis.....	56	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	3
Simple Meningitis.....	57	13	24	15	47	3	103	6	37	6	27	30	16	21	3	58	1	8	6	18	9	10
Including Cerebro-spinal Fever.....	61	13	24	15	47	3	103	6	37	6	27	30	16	21	3	58	1	8	6	18	9	63

TABLE 5.—SHOWING AGES AT DEATH AND OCCUPATIONS OF DECEASED IN DECEMBER

Disease of the respiratory system (Consumption and pneumonia excepted)	Age at death										Totals
	10 to 15	15 to 20	20 to 30	30 to 40	40 to 50	50 to 60	60 to 70	70 to 80	80 to 90	Over 90	
Janitors and watchmen.											18
Jewellers and watchmen.											5
Laborers.	10	2	1	1	1	1	1	1	1	1	115
Landresses.	10	1	1	1	1	1	1	1	1	1	11
Laundresses.	10	1	1	1	1	1	1	1	1	1	11
Lawyers.											4
Leatherworkers.											1
Letter-carriers.											1
Linemen.											1
Linoleumworkers.											1
Locksmiths.											1
Machinists.											15
Managers and superintendents.											16
Manufacturers.											16
Masons.											9
Mechanics.											18
Milkmen.											30
Milkmen.											1
Millers.											2
Miners.											5
Musicians.											5
Nurses.											4
Painters.											12
Papachangers.											4
Totals	18	7	10	115	11	4	7	9	11	1	25
Disease of the respiratory system (digestive system)	Age at death										Totals
10 to 15											7
15 to 20											10
20 to 30											115
30 to 40											11
40 to 50											1
50 to 60											1
60 to 70											4
70 to 80											4
80 to 90											4
Over 90											4
Totals	7	10	115	11	4	7	9	11	1	1	7
Disease of the genito-urinary system and adnexa.	Age at death										Totals
10 to 15											9
15 to 20											191
20 to 30											6
30 to 40											4
40 to 50											7
50 to 60											9
60 to 70											1
70 to 80											1
80 to 90											1
Over 90											1
Totals	25	9	191	6	4	7	9	11	1	1	25
Pneumonia.	Age at death										Totals
10 to 15											17
15 to 20											1
20 to 30											8
30 to 40											230
40 to 50											3
50 to 60											1
60 to 70											9
70 to 80											4
80 to 90											1
Over 90											1
Totals	17	1	8	230	3	1	9	4	1	1	17
Violent deaths. (Suicide excepted).	Age at death										Totals
10 to 15											18
15 to 20											1
20 to 30											1
30 to 40											3
40 to 50											5
50 to 60											2
60 to 70											2
70 to 80											4
80 to 90											1
Over 90											1
Totals	18	1	2	376	1	3	5	2	4	1	18

NEW JERSEY FROM CERTAIN SELECTED DISEASES FOR THE YEAR ENDING 31, 1910.

Disease	Age at death										Totals
	10 to 15	15 to 20	20 to 30	30 to 40	40 to 50	50 to 60	60 to 70	70 to 80	80 to 90	Over 90	
Photographers.											1
Physicians.											6
Plumbers.											2
Porters.											5
Printers.											8
Railroad employes.											17
Real estate and insurance.											11
Rubberworkers.											2
Sailors.											5
Saemen.											8
Shipbuilders.											3
Shoemakers.											1
Silkweavers and silkwormers.											2
Stonemasons.											1
Tailors.											12
Tanners.											1
Teachers.											10
Telegraphers.											1
Tileworkers.											2
Tinmiths.											1
Trunkmakers.											1
Undertakers.											1
Upholsters.											1
Waiters.											3
Watchmakers.											4
Weavers.											4
Wheelwrights.											1
Wireworkers.											27
All other occupations.											1
All other professions.											1
All other trades.											4
Totals	10	6	4	6	9	10	25	17	2	23	110

TABLE 5.—SHOWING AGES AT DEATH AND OCCUPATIONS OF DECEDENTS IN DECEMBER

All other diseases and causes of death.	Ages at death										Totals
	10 to 15	15 to 20	20 to 30	30 to 40	40 to 50	50 to 60	60 to 70	70 to 80	80 to 90	Over 90	
Barbers and watchmakers.				1							15
Jewelers.				1							3
Laborers.			13	46	33	28	40	20	16	1	236
Laundresses.			1	1	1	1	1	1	1	1	10
Laundrymen.			1	1	1	1	1	1	1	1	10
Lawyers.			1	1	1	1	1	1	1	1	10
Leatherworkers.			1	1	1	1	1	1	1	1	10
Lettercarriers.			1	1	1	1	1	1	1	1	10
Linemen.			1	1	1	1	1	1	1	1	10
Linoleumworkers.			1	1	1	1	1	1	1	1	10
Locksmiths.			1	1	1	1	1	1	1	1	10
Machinists.			1	1	1	1	1	1	1	1	10
Managers and superintendents.			1	1	1	1	1	1	1	1	10
Manufacturers.			1	1	1	1	1	1	1	1	10
Masons.			1	1	1	1	1	1	1	1	10
Merchants.			1	1	1	1	1	1	1	1	10
Milkmen.			1	1	1	1	1	1	1	1	10
Millers.			1	1	1	1	1	1	1	1	10
Miners.			1	1	1	1	1	1	1	1	10
Musicians.			1	1	1	1	1	1	1	1	10
Nurses.			1	1	1	1	1	1	1	1	10
Painters.			1	1	1	1	1	1	1	1	10
Paperhangers.			1	1	1	1	1	1	1	1	10

NEW JERSEY FROM CERTAIN SELECTED DISEASES FOR THE YEAR ENDING 31, 1910.

Photographers.	1
Physicians.	1
Plumbers.	1
Porters.	1
Printers.	1
Printers.	1
Railroad employes.	1
Real estate and insurance.	1
Rubberworkers.	1
Sailors.	1
Salesmen.	1
Shipbuilders.	1
Shoemakers.	1
Silkworkers and silkweavers.	1
Stonemasons.	1
Tailors.	1
Tanners.	1
Teachers.	1
Telegraphers.	1
Tileworkers.	1
Tinsmiths.	1
Trunkmakers.	1
Undertakers.	1
Upholsters.	1
Waiters.	1
Watchmakers.	1
Weavers.	1
Wheelerights.	1
Wireworkers.	1
All other occupations.	1
All other professions.	1
All other trades.	1

TABLE 11.—TABULATION OF DEATHS FROM THE CLASSIFIED DISEASES, THE YEAR ENDING

IN THE STATISTICAL DIVISIONS OF THE STATE OF NEW JERSEY, FOR DECEMBER 31, 1910.

DEATHS IN BRIDGETON.	AGE PERIODS.						
	Under one month.	Under 1 year, "not including under 1 mo."	One to five.	Five to ten.	Ten to fifteen.	Fifteen to twenty.	Twenty to twenty-five.
Typhoid Fever.....	1						
Diphtheria and Croup.....			3				
Including Croup.....			9				
Influenza.....			10				
Dysentery.....			14				
Tuberculosis of the Lungs.....		2	1	2	9	3	2
Acute Miliary Tuberculosis.....							1
Abdominal Tuberculosis.....							1
Syphilis.....		1					
Cancer and Other Malignant Tumors of the Buccal Cavity.....			1				
Cancer and Other Malignant Tumors of the Stomach, Liver.....							
Cancer and Other Malignant Tumors of the Female Genital Organs.....							1 2 1
Cancer and Other Malignant Tumors of Other Organs or of Organs Not Specified.....							
Acute Articular Rheumatism.....			1				
Diabetes.....							
Simple Meningitis.....				1			
Including Cerebro-spinal Fever.....		1	1				
Locomotor Ataxia.....							
Cerebral Haemorrhage, Apoplexy.....							1
Softening of the Brain.....							1
Paralysis Without Specified Cause.....			1				
General Paralysis of the Insane.....							
Other Forms of Mental Alienation.....							
Convulsions of Infants.....		1					
Other Diseases of the Nervous System.....							
Pericarditis.....							
Acute Endocarditis.....				1			1
Organic Diseases of the Heart.....							
Angina Pectoris.....					1		1
Diseases of the Arteries, Atheroma, Aneurysm, etc.....							
Diseases of the Larynx.....			2				
Diseases of the Thyroid Body.....							
Acute Bronchitis.....		2	4				
Chronic Bronchitis.....			1				
Broncho-Pneumonia.....		1	1				
Pneumonia.....		2	1		1		
Pulmonary Congestion, Pulmonary Apoplexy.....		1					
Ulcer of the Stomach.....							
Other Diseases of the Stomach (Cancer excepted).....							
Diarrhoea and Enteritis (under 2 years).....		5					
Diarrhoea and Enteritis (2 years and over).....							
Cirrhosis of the Liver.....							
Biliary Calculi.....							
Other Diseases of the Liver.....		1					
Simple Peritonitis (Non-Puerperal).....				1			
Acute Nephritis.....							
Bright's Disease.....							
Calculi of the Urinary Passages.....							
Diseases of the Bladder.....							
Salpingitis and Other Diseases of the Female Genital Organs.....							
Other Accidents of Labor.....							
Puerperal Albuminuria and Convulsions.....							
Diseases of the Bones (Tuberculosis excepted).....							
Congenital Debility, Icterus and Sclerema.....	4	1	1				

AGE PERIODS.	SEX.	COLOR.	NATIVITY.	SOCIAL CONDITION.	
				Married.	Single.
Fifty to fifty-five.			England.		
Fifty-five to sixty.			France.		
Sixty to seventy.			Germany.		
Seventy to eighty.			Ireland.		
Eighty to ninety.			Italy.		
Over ninety.			Scotland.		
Not stated.			Hungary.		
Male.			Sweden.		
Female.			Russia.		
Number of decedents in color black—figure in this column.			Holland.		
			Other foreign.		
			Not stated.		
			United States.		
			England.		
			France.		
			Germany.		
			Ireland.		
			Italy.		
			Scotland.		
			Hungary.		
			Sweden.		
			Russia.		
			Holland.		
			Other foreign.		
			Not stated.		
			Married.		
			Single.		
			Widowed.		
			Not stated.		

TABLE 11.—TABULATION OF DEATHS FROM THE CLASSIFIED DISEASES, THE YEAR ENDING

DEATHS IN BRIDGETON.	AGE PERIODS.											
	Under one month.	Under 1 year, "not including under 1 mo."	One to five.	Five to ten.	Ten to fifteen.	Fifteen to twenty.	Twenty to twenty-five.	Twenty-five to thirty.	Thirty to thirty-five.	Thirty-five to forty.	Forty to forty-five.	Forty-five to fifty.
Senility.....	144											
Suicide by Asphyxia.....	156											
Suicide by Firearms.....	159											
Other Acute Poisonings.....	165											
Accidental Drownings.....	169											
Traumatism by Fall.....	172											
Traumatism by Other Crushing (Vehicles, Railroads, Landslides, etc.).....	175											
Excessive Cold.....	178											
Other External Violence.....	186	1										
Cause of Death Not Specified or Ill-defined.....	189	3										
Total deaths, 216. Death-rate, 15.20.												

IN THE STATISTICAL DIVISIONS OF THE STATE OF NEW JERSEY, FOR DECEMBER 31, 1910—Continued.

AGE PERIODS.	SEX.	COLOR.	NATIVITY.										SOCIAL CONDITION.							
			United States.	England.	France.	Germany.	Ireland.	Italy.	Scotland.	Hungary.	Sweden.	Russia.	Holland.	Other foreign.	Not stated.	Married.	Single.	Widowed.	Not stated.	
Fifty to fifty-five.																				
Fifty-five to sixty.																				
Sixty to seventy.																				
Seventy to eighty.																				
Eighty to ninety.																				
Over ninety.																				
Not stated.																				
Male.																				
Female.																				
Number of decedents "color black" designated by figure in this column.																				

TABLE 14.—TABULATION OF DEATHS FROM THE CLASSIFIED DISEASES, THE YEAR ENDING

DEATHS IN DOVER.	AGE PERIODS.											
	Under one month.	Under 1 year, "not including under 1 mo."	One to five.	Five to ten.	Ten to fifteen.	Fifteen to twenty.	Twenty to twenty-five.	Twenty-five to thirty.	Thirty to thirty-five.	Thirty-five to forty.	Forty to forty-five.	Forty-five to fifty.
Malaria.....	4		1									
Tuberculosis of the Lungs.....	28			1	1	1	1	2				
Cancer and Other Malignant Tumors of the Stomach, Liver.....	40										1	
Cancer and Other Malignant Tumors of the Peritonæum, Intestines, Rectum.....	41											1
Cancer and Other Malignant Tumors of the Female Genital Organs.....	42											
Chronic Rheumatism and Gout.....	48											1
Simple Meningitis.....	61	2										
Other Diseases of the Spinal Cord.....	63		1									
Cerebral Hemorrhage, Apoplexy.....	64											
Softening of the Brain.....	65											
Paralysis Without Specified Cause.....	66											
Organic Diseases of the Heart.....	79	1										
Angina Pectoris.....	80											
Diseases of the Arteries, Atheroma, Aneurysm, etc.....	81											
Acute Bronchitis.....	89	1										
Chronic Bronchitis.....	90											
Broncho-Pneumonia.....	91											
Pneumonia.....	92	2	1									
Fluorid.....	93											
Pulmonary Congestion, Pulmonary Apoplexy.....	94											
Asthma.....	96											
Other Diseases of the Stomach (Cancer excepted).....	103	3				1						
Diarrhœa and Enteritis (under 2 years).....	104	9	2									
Diarrhœa and Enteritis (2 years and over).....	105		1	1								
Acute Nephritis.....	119											
Bright's Disease.....	120											1
Acute Abscess.....	144	1										
Congenital Malformations (Stillbirths not included).....	150	1										
Congenital Debility, Icterus and Sclerema.....	151	6										
Senility.....	154											
Suicide by Firearms.....	159					1						
Burns (Conflagration excepted).....	161						1					
Accidental Drowning.....	169		1				1					
Traumatism by Other Crushing (Venices, Railroad, Landslides, etc.).....	175					1					1	
Cause of Death Not Specified or Ill-defined.....	189	1										

Total deaths, 109. Death-rate, 13.39.

IN THE STATISTICAL DIVISIONS OF THE STATE OF NEW JERSEY, FOR DECEMBER 31, 1910.

AGE PERIODS.	SEX.	COLOR.	NATIVITY.	SOCIAL CONDITION.	
				Single.	Widowed.
Fifty to fifty-five.	Male.	Female.	United States.	Other foreign.	Not stated.
Fifty to fifty-five.	1	6	England.	1	1
Fifty-five to sixty.	2	2	France.	1	1
Sixty to seventy.	1	1	Germany.	1	1
Seventy to eighty.	1	1	Ireland.	1	1
Eighty to ninety.	1	1	Italy.	1	1
Over ninety.	1	1	Scotland.	1	1
Not stated.	1	1	Hungary.	1	1
	1	1	Sweden.	1	1
	1	1	Russia.	1	1
	1	1	Holland.	1	1
	1	1	Other foreign.	1	1
	1	1	Not stated.	1	1
	1	1	Married.	1	1
	1	1	Single.	1	1
	1	1	Widowed.	1	1
	1	1	Not stated.	1	1

Number of accidents, number of deaths caused by figure in this column.

TABLE 16.—TABULATION OF DEATHS FROM THE CLASSIFIED DISEASES, THE YEAR ENDING

IN THE STATISTICAL DIVISIONS OF THE STATE OF NEW JERSEY, FOR DECEMBER 31, 1910.

DEATHS IN ELIZABETH.	AGE PERIODS.											
	Under one month.	Under 1 year, "not including under 1 mo."	One to five.	Five to ten.	Ten to fifteen.	Fifteen to twenty.	Twenty to twenty-five.	Twenty-five to thirty.	Thirty to thirty-five.	Thirty-five to forty.	Forty to forty-five.	Forty-five to fifty.
Typhoid Fever.....	1											
Malaria.....	4											
Measles.....	6	1	1									
Scarlet Fever.....	7			6	1					1		
Whooping Cough.....	4	1	3									
Diphtheria and Croup.....	9	1	10									
Including Croup.....	9	2	1									
Dysentery.....	14	1	3									
Erysipelas.....	18											
Purulent Infection and Sepsis.....	20											
Tetanus.....	24			1								
Tuberculosis of the Lungs.....	23					8	11	19	15		11	10
Tuberculous Meningitis.....	30		2	4	2	1	1	1				
Abdominal Tuberculosis.....	31		2	1						1		1
Tuberculosis of Other Organs.....	34					1						
Disseminated Tuberculosis.....	35							1				
Rickets.....	36		1									
Syphilis.....	37											1
Cancer and Other Malignant Tumors of the Buccal Cavity.....	39											
Cancer and Other Malignant Tumors of the Stomach, Liver.....	40		1			1						1
Cancer and Other Malignant Tumors of the Peritoneum, Intestines, Rectum.....	41						1	1				
Cancer and Other Malignant Tumors of the Female Genital Organs.....	42						2	1	1	2		
Cancer and Other Malignant Tumors of the Breast.....	43							1				1
Cancer and Other Malignant Tumors of Other Organs or of Organs not Specified.....	45								1	1		
Acute Articular Rheumatism.....	47						1					
Diabetes.....	50					2				1		
Leuchemia.....	55											
Anemia, Chlorosis.....	54		1	1	1							
Other General Diseases.....	55		1							1		
Alcoholism (Acute or Chronic).....	56										1	
Other Chronic Poisonings.....	59											
Simple Meningitis.....	61	2	1	5	1							
Including Cerebro-spinal Fever.....	61	2	1	5	1							
Locomotor Ataxia.....	62									1		
Other Diseases of the Spinal Cord.....	63		2	1								
Cerebral Hemorrhage, Apoplexy.....	64		2	1	1			1	3	2	9	
Softening of the Brain.....	74											
Paralysis Without Specified Cause.....	66											
Epilepsy.....	69											
Convulsions of Infants.....	71	3	3	2								
Chorea.....	72											
Other Diseases of the Nervous System.....	74			1								
Diseases of the Ear.....	76											
Pericarditis.....	77				1	1						
Acute Endocarditis.....	78											
Organic Diseases of the Heart.....	79	1	1	2	1	1	1	3	2	3	3	3
Angina Pectoris.....	80											
Diseases of the Arteries, Atheroma, Aneurysm, etc.....	81		1							1		
Embolism and Thrombosis.....	82											
Diseases of the Lymphatic System (Lymphangitis, etc.).....	84		1									
Diseases of the Larynx.....	87											
Diseases of the Thyroid Body.....	87											
Acute Bronchitis.....	89	2	2									

AGE PERIODS.	SEX.	COLOR.	NATIVITY.													SOCIAL CONDITION.										
			United States.													Married.	Single.	Widowed.	Not stated.							
Fifty to fifty-five.	Fifty-five to sixty.	Sixty to seventy.	Seventy to eighty.	Eighty to ninety.	Over ninety.	Not stated.	Male.	Female.	Number of discolored "color black," designated by figure in this column.	England.	France.	Germany.	Ireland.	Italy.	Scotland.	Switzerland.	Sweden.	Russia.	Holland.	Other foreign.	Not stated.	Married.	Single.	Widowed.	Not stated.	
1							11	3		9		2											7	6	1	
4							4	1		3		1											1	4	7	
3							3	5		12		1											1	7	5	
9							9	6		12		2											1	12	1	
5							4	2		2													4	1	2	
1							1	1															1	4	1	
1							1	1		1													1	1	1	
1							1	1		2													1	1	1	
1							1	1		1													1	1	1	
1							1	1		1													1	1	1	
1							1	1		1													1	1	1	
1							1	1		1													1	1	1	
1							1	1		1													1	1	1	
1							1	1		1													1	1	1	
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1							1	1		1																

TABLE 18.—TABULATION OF DEATHS FROM THE CLASSIFIED DISEASES, THE YEAR ENDING

	AGE PERIODS.											
	Under one month.	Under 1 year, "not including under 1 mo."	One to five.	Five to ten.	Ten to fifteen.	Fifteen to twenty.	Twenty to twenty-five.	Twenty-five to thirty.	Thirty to thirty-five.	Thirty-five to forty.	Forty to forty-five.	Forty-five to fifty.
DEATHS IN GARFIELD.												
Typhoid Fever.....	1											
Scarlet Fever.....	2											
Diphtheria and Croup.....	1	1										
Tuberculosis of the Lungs.....	23					1						
Tuberculous Meningitis.....	30	2	2				1	1	1			
Abdominal Tuberculosis.....	31											
Tuberculosis of Other Organs.....	34	1			1							
Syphilis.....	37											
Cancer and Other Malignant Tumors of the Stomach, Liver.....	40										1	
Diabetes.....	50											
Addison's Disease.....	53											
Simple Meningitis.....	61				1			1				
Cerebral Hemorrhage, Apoplexy.....	64											
Softening of the Brain.....	65							1				
Paralysis Without Specified Cause.....	66											
Epilepsy.....	69											
Convulsions of Infants.....	71	1	2			1						
Chorea.....	72											
Acute Endocarditis.....	78	1										
Organic Diseases of the Heart.....	79											
Angina Pectoris.....	79				1							
Acute Bronchitis.....	89	1						1				
Broncho-Pneumonia.....	91	2	5	3								
Pneumonia.....	92	2	8	4								
Other Diseases of the Stomach (Cancer excepted).....	103					1		1	1	1		
Diarrhœa and Enteritis (under 2 years).....	104											
Other Diseases of the Intestines.....	110	1	23	6								
Acute Nephritis.....	115											
Bright's Disease.....	119											
Diseases of the Bladder.....	124			1								
Accidents of Pregnancy.....	134					1						
Acute Abscess.....	144	1										
Other Diseases of the Skin and Adnexa.....	145			1								
Congenital Debility, Icterus and Scelerema.....	151											
Suicide by Hanging or Strangulation.....	157	15										
Burns (Conflagration excepted).....	167			1								
Accidental Drowning.....	169				1							
Traumatism by Other Crushing (Vehicles, Rail-road, Landslides, etc.).....	175									1		
Homicide by Cutting or Piercing Instruments.....	183										1	
Cause of Death not Specified or Ill-defined.....	189	1	2									
Total deaths, 180. Death-rate, 12.73.												

IN THE STATISTICAL DIVISIONS OF THE STATE OF NEW JERSEY, FOR DECEMBER 31, 1910.

	AGE PERIODS.							SEX.	COLOR.	NATIVITY.												SOCIAL CONDITION.								
	Fifty to fifty-five.	Fifty-five to sixty.	Sixty to seventy.	Seventy to eighty.	Eighty to ninety.	Over ninety.	Not stated.			Male.	Female.	Number of decedents - color black - designated by figure in this column.	United States.	England.	France.	Germany.	Ireland.	Italy.	Scotland.	Hungary.	Sweden.	Russia.	Holland.	Other foreign.	Not stated.	Married.	Single.	Widowed.	Not stated.	

TABLE 19.—TABULATION OF DEATHS FROM THE CLASSIFIED DISEASES, THE YEAR ENDING

IN THE STATISTICAL DIVISIONS OF THE STATE OF NEW JERSEY, FOR DECEMBER 31, 1910.

DEATHS IN GLOUCESTER CITY.	AGE PERIODS.								
	Under one month.	Under 1 year, "not including under 1 mo."	One to five.	Five to ten.	Ten to fifteen.	Fifteen to twenty.	Twenty to thirty.	Thirty to forty.	Forty to fifty.
Typhoid Fever.....	1								
Whooping Cough.....	8								
Diphtheria and Croup.....	9								
Influenza.....	10								
Tuberculosis of the Lungs.....	38								
Disseminated Tuberculosis.....	35								
Cancer and Other Malignant Tumors of the Stomach, Liver.....	40								
Cancer and Other Malignant Tumors of the Female Genital Organs.....	42								
Diabetes.....	50								
Alcoholism (Acute or Chronic).....	56								
Cerebral Hemorrhage, Apoplexy.....	64								
Paralysis Without Specified Cause.....	66								
Convulsions of Infants.....	71	1	2						
Organic Diseases of the Heart.....	79								
Angina Pectoris.....	80								
Broncho-Pneumonia.....	91		3						
Pneumonia.....	92	1							
Pulmonary Congestion, Pulmonary Apoplexy.....	94	1							
Asthma.....	96								
Other Diseases of the Respiratory System (Tuberculosis excepted).....	98								
Other Diseases of the Stomach (Cancer excepted).....	103	1	3	4					
Diarrhoea and Enteritis (under 2 years).....	104	2	14						
Other Diseases of the Liver.....	105								
Acute Nephritis.....	115								
Bright's Disease.....	120								
Puerperal Albuminuria and Convulsions.....	138								
Gangrene.....	142								
Congenital Deblity, Tetanus and Sclerema.....	151								
Other Diseases Peculiar to Early Infancy.....	152	7	1						
Senility.....	154	2							
Suicide by Firearms.....	159								
Burns (Conflagration excepted).....	167								
Accidental Drowning.....	169								
Traumatism by Fall.....	172								
Traumatism by Other Crushing (Vehicles, Railroad, Landlides, etc.).....	175								
Cause of Death not Specified or Ill-defined.....	189	2							

Total deaths, 147. Death-rate, 15.54.

AGE PERIODS.	SEX.	COLOR.	NATIVITY.	SOCIAL CONDITION.		
				Married.	Singlc.	Widowcl.
Fifty to fifty-five.						
Fifty-five to sixty.						
Sixty to seventy.						
Seventy to eighty.						
Eighty to ninety.						
Over ninety.						
Not stated.						
Male.						
Female.						
Number of decedents whose nativity is indicated by figure in this column.						
United States.						
England.						
France.						
Germany.						
Ireland.						
Italy.						
Scotland.						
Hungary.						
Sweden.						
Russia.						
Holland.						
Other foreign.						
Not stated.						
Married.						
Singlc.						
Widowcl.						
Not stated.						

TABLE 24.—TABULATION OF DEATHS FROM THE CLASSIFIED DISEASES, THE YEAR ENDING

IN THE STATISTICAL DIVISIONS OF THE STATE OF NEW JERSEY, FOR DECEMBER 31, 1910.

DEATHS IN JERSEY CITY.	AGE PERIODS.										
	Under one month.	Under 1 year, "not including under 1 mo."	One to five.	Five to ten.	Ten to fifteen.	Fifteen to twenty.	Twenty to twenty-five.	Twenty-five to thirty.	Thirty to thirty-five.	Thirty-five to forty.	Forty to forty-five.	Forty-five to fifty.
Typhoid Fever.....	1	1	1	1	3	4	9	2	1	8	
Malaria.....	2	2	15	2	3	3	2	2	1	1	
Measles.....	2	2	21	6	1	2	1				
Scarlet Fever.....	7	1	5	1	1	1					
Whooping Cough.....	3	1	2	1	1	1					
Diphtheria and Croup.....	9	1	45	19	3	1					
Including: Croup.....	9	1	12	2							
Influenza.....	10										
Dysentery.....	14	3	3								
Erysipelas.....	18	2	4	1	1	1	1	2	1		
Other Epidemic Diseases.....	19	1	1								
Purulent Infection and Septicæmia.....	24	2									
Tetanus.....	24			1	1						
Tuberculosis of the Lungs.....	28	6	2	2	120	53	58	62	74	49	45
Acute Miliary Tuberculosis.....	23										
Tuberculous Meningitis.....	30	1	10	3	2	4	3	1	1		
Abdominal Tuberculosis.....	31	9	2	1	1	1	1	1	1	2	1
Pott's Disease.....	32										
White Swellings.....	33										
Tuberculosis of Other Organs.....	34										
Disseminated Tuberculosis.....	35										
Rickets.....	36										
Syphilis.....	37	4	4	2							
Cancer and Other Malignant Tumors of the Buccal Cavity.....	39								1	1	2
Cancer and Other Malignant Tumors of the Stomach, Liver.....	40				1	1			1	8	9
Cancer and Other Malignant Tumors of the Peritoneum, Intestines, Rectum.....	41									3	2
Cancer and Other Malignant Tumors of the Female Genital Organs.....	42						2	3	4	3	
Cancer and Other Malignant Tumors of the Breast.....	43								1	2	3
Cancer and Other Malignant Tumors of Other Organs or of Organs not Specified.....	45						1			2	
Other Tumors (Tumors of the Female Genital Organs excepted).....	46										
Acute Articular Rheumatism.....	47					1			2	3	
Chronic Rheumatism and Gout.....	48				1						
Scurvy.....	49	1	1								
Diabetes.....	50				1						
Exophthalmic Goitre.....	51										
Leucæmia.....	53		1								
Anæmia, Chlorosis.....	54			2							
Other General Diseases.....	55	1	1								
Alcoholism (Acute or Chronic).....	56										
Encephalitis.....	60										
Simple Meningitis.....	61	2	15	18	5	2	3	1	1	1	2
Including Cerebro-spinal Fever.....	61 A		7	2	4						
Locomotor Ataxia.....	62										
Other Diseases of the Spinal Cord.....	63										
Cerebral Hemorrhage, Apoplexy.....	64	4	6	1	2	2	1	7	8	16	12
Softening of the Brain.....	65										
Paralysis Without Specified Cause.....	66										
General Paralysis of the Insane.....	67										
Other Forms of Mental Alienation.....	68										
Epilepsy.....	69										
Convulsions (Non-Fuerperal).....	70		2	1							
Convulsions of Infants.....	71	8	21	4							

AGE PERIODS.	SEX.	COLOR.	NATIVITY.											SOCIAL CONDITION.								
			Male.	Female.	Number of descendants "color black" designated by figure in this column.	United States.	England.	France.	Germany.	Ireland.	Italy.	Scotland.	Hungary.	Sweden.	Russia.	Holland.	Other foreign.	Not stated.	Married.	Single.	Widowed.	Not stated.
Fifty to fifty-five.			23	2		13	9											1	20	9	2	
Fifty-five to sixty.			11	10		20	3												21	2	2	
Sixty to seventy.			17	17		31	7												34	1	1	
Seventy to eighty.			3	3		6	3												13	70		
Eighty to ninety.			3	6		15	2												15	15	1	
Over ninety.			4	2		1	1												1	1	1	
Not stated.			10	7		11	2												2	9	5	1
Male.			2	1		1	1												7	4	4	
Female.			2	3		1	1												1	1	1	
Number of descendants "color black" designated by figure in this column.			3	3		1	1												2	2	2	
United States.			281	162		17	237	2	2	9	65	9	4	6	7	18		8	22	170	37	
England.			11	11		1	16	1	1	24	1								1	21	5	
France.			1	1		1	2			1									5	9	2	
Germany.			10	6		3	13			1									1	1	1	
Ireland.			1	1		1	1			1									2	2	2	
Italy.			1	1		1	1			1									1	1	1	
Scotland.			3	3		1	1			1									1	1	1	
Hungary.			1	1		1	1			1									1	1	1	
Sweden.			1	1		1	1			1									1	1	1	
Russia.			1	1		1	1			1									1	1	1	
Holland.			1	1		1	1			1									1	1	1	
Other foreign.			1	1		1	1			1									1	1	1	
Not stated.			1	1		1	1			1									1	1	1	
Married.			2	2		1	2			2	5	2	2	2	2	2		2	2	2	2	
Single.			1	1		1	1			1	1	1	1	1	1	1		1	1	1	1	
Widowed.			1	1		1	1			1	1	1	1	1	1	1		1	1	1	1	
Not stated.			1	1		1	1			1	1	1	1	1	1	1		1	1	1	1	

TABLE 27.—TABULATION OF DEATHS FROM THE CLASSIFIED DISEASES, THE YEAR ENDING

IN THE STATISTICAL DIVISIONS OF THE STATE OF NEW JERSEY, FOR DECEMBER 31, 1910.

DEATHS IN LONG BRANCH.	AGE PERIODS.							
	Under one month.	Under 1 year, "not including under 1 mo."	One to five.	Five to ten.	Ten to fifteen.	Fifteen to twenty.	Twenty to twenty-five.	Twenty-five to thirty.
Typhoid Fever.....	1							
Scarlet Fever.....	7							
Whooping Cough.....	1							
Diphtheria and Croup.....	5							
Influenza.....	10							
Dysentery.....	14							
Tetanus.....	24							
Tuberculosis of the Lungs.....	28							
Tuberculous Meningitis.....	30							
Abdominal Tuberculosis.....	31							
Tuberculosis of Other Organs.....	34							
Disseminated Tuberculosis.....	35							
Cancer and Other Malignant Tumors of the Buccal Cavity.....	39							
Cancer and Other Malignant Tumors of the Stomach, Liver.....	40							
Cancer and Other Malignant Tumors of the Female Genital Organs.....	42							
Cancer and Other Malignant Tumors of the Breast.....	43							
Cancer and Other Malignant Tumors of Other Organs or of Organs not Specified.....	45							
Other Tumors (Tumors of the Female Genital Organs excepted).....	46							
Scurvy.....	49							
Diabetes.....	50							
Exophthalmic Goitre.....	51							
Addison's Disease.....	52							
Anæmia, Chlorosis.....	54							
Alcoholism (Acute or Chronic).....	56							
Simple Meningitis.....	61							
Including Cerebro-spinal Fever.....	61 A							
Cerebral Hemorrhage, Apoplexy.....	64							
Paralysis Without Specified Cause.....	66							
Other Forms of Mental Alienation.....	68							
Acute Endocarditis.....	78							
Organic Diseases of the Heart.....	79							
Angina Pectoris.....	80							
Diseases of the Arteries, Atheroma, Aneurysm, etc.....	81							
Diseases of the Lymphatic System (Lymphangitis, etc.).....	84							
Acute Bronchitis.....	89							
Bronchio-Pneumonia.....	91							
Pneumonia.....	92							
Pulmonary Congestion, Pulmonary Apoplexy.....	94							
Other Diseases of the Respiratory System (Tuberculosis excepted).....	98							
Other Diseases of the Stomach (Cancer excepted).....	103							
Diarrhœa and Enteritis (under 2 years).....	104							
Diarrhœa and Enteritis (2 years and over).....	105							
Appendicitis and Typhlitis.....	106							
Hernia, Intestinal Obstructions.....	109							
Other Diseases of the Intestines.....	110							
Cirrhosis of the Liver.....	113							
Other Diseases of the Liver.....	115							
Simple Peritonitis (Non-Puerperal).....	117							
Acute Nephritis.....	119							
Bright's Disease.....	120							
Other Diseases of the Kidneys and Adnexa.....	122							
Diseases of the Prostate.....	126							

AGE PERIODS.	SEX.	COLOR.	NATIVITY.	SOCIAL CONDITION.			
				Married.	Single.	Widowed.	Not stated.
Fifty to fifty-five.	Male.	White.	United States.	Married.	Single.	Widowed.	Not stated.
Fifty-five to sixty.	Female.	Colored.	Foreign.				
Sixty to seventy.	Number of dependents as stated by figure in this column.	United States.	England.				
Seventy to eighty.		France.	Germany.				
Eighty to ninety.		Ireland.	Italy.				
Over ninety.		Scotland.	Hungary.				
Not stated.		Russia.	Sweden.				
		Holland.	Other foreign.				
		Not stated.	Not stated.				

TABLE 38.—TABULATION OF DEATHS FROM THE CLASSIFIED DISEASES, THE YEAR ENDING

IN THE STATISTICAL DIVISIONS OF THE STATE OF NEW JERSEY, FOR DECEMBER 31, 1910.

DEATHS IN PHILLIPSBURG.	AGE PERIODS.											
	Under one month.	Under 1 year, "not including under 1 mo."	One to five.	Five to ten.	Ten to fifteen.	Fifteen to twenty.	Twenty to twenty-five.	Twenty-five to thirty.	Thirty to thirty-five.	Thirty-five to forty.	Forty to forty-five.	Forty-five to fifty.
Typhoid Fever.....	1											
Measles.....	6		3	1								
Scarlet Fever.....	7		1	1								
Whooping Cough.....	7		1	1								
Diphtheria and Croup.....	9		3	1								
Influenza.....	10											
Tuberculosis of the Lungs.....	28		1									
Tuberculous Meningitis.....	30					4	4	4				
Abdominal Tuberculosis.....	31		1									
Tuberculosis of Other Organs.....	34				1						1	
Gonococcus Infection.....	38											
Cancer and Other Malignant Tumors of the Stomach, Liver.....	40									1		
Cancer and Other Malignant Tumors of the Peritoneum, Intestines, Rectum.....	41											
Cancer and Other Malignant Tumors of the Female Genital Organs.....	42											2
Acute Articular Rheumatism.....	47											
Diabetes.....	50				1							
Anæmia Chlorosis.....	54											1
Chronic Lead Poisoning.....	57											
Simple Meningitis.....	61		1	2	1							
Locomotor Ataxia.....	62											
Cerebral Hemorrhage, Apoplexy.....	64		5	1								
Paralysis Without Specified Cause.....	66											
Epilepsy.....	69	1										
Convulsions of Infants.....	71	1										
Other Diseases of the Nervous System.....	74											
Pericarditis.....	77											
Acute Endocarditis.....	78											
Organic Diseases of the Heart.....	79				1							
Angina Pectoris.....	80											
Diseases of the Arteries, Atheroma, Aneurysm, etc.....	81											
Diseases of the Larynx.....	87						1					
Broncho-Pneumonia.....	91											
Pneumonia.....	92	1	4	5		1	1	2	1			
Flourish.....	93											
Pulmonary Congestion, Pulmonary Apoplexy.....	94	1										
Other Diseases of the Stomach (Cancer excepted).....	103											
Diarrhoea and Enteritis (under 2 years).....	104	3	10	2								
Diarrhoea and Enteritis (2 years and over).....	105											
Cirrhosis of the Liver.....	113											1
Acute Nephritis.....	119											
Bright's Disease.....	120	1				1						1
Diseases of the Bladder.....	124											
Other Diseases of the Uterus.....	136											
Other Diseases of the Skin and Annexa.....	145											
Congenital Debility, Icterus and Sclerema.....	151		1									
Lack of Care.....	153		1									
Senility.....	154											
Suicide by Poison.....	155											
Burns (Conflagration excepted).....	167											
Traumatism by Fall.....	172			2								
Traumatism by Other Crushing (Vehicles, Railroad, Landslides, etc.).....	175					1						2
Cause of Death Not Specified or Ill-defined.....	189	1										
Total deaths, 213. Death-rate, 15.32.												

AGE PERIODS.	SEX.	COLOR.	NATIVITY.	SOCIAL CONDITION.		
				Married.	Single.	Widowed.
Fifty to fifty-five.	Male.	Female.	United States.	Not stated.	Not stated.	Not stated.
			England.			
			France.			
			Germany.			
			Ireland.			
			Italy.			
			Scotland.			
			Hungary.			
			Sweden.			
			Russia.			
			Holland.			
			Other foreign.			
			Not stated.			
			Number of (descendents "color black" design-ly figure in this column.			
			United States.			
			England.			
			France.			
			Germany.			
			Ireland.			
			Italy.			
			Scotland.			
			Hungary.			
			Sweden.			
			Russia.			
			Holland.			
			Other foreign.			
			Not stated.			
			Number of (descendents "color black" design-ly figure in this column.			
			United States.			
			England.			
			France.			
			Germany.			
			Ireland.			
			Italy.			
			Scotland.			
			Hungary.			
			Sweden.			
			Russia.			
			Holland.			
			Other foreign.			
			Not stated.			
			Number of (descendents "color black" design-ly figure in this column.			
			United States.			
			England.			
			France.			
			Germany.			
			Ireland.			
			Italy.			
			Scotland.			
			Hungary.			
			Sweden.			
			Russia.			
			Holland.			
			Other foreign.			
			Not stated.			
			Number of (descendents "color black" design-ly figure in this column.			
			United States.			
			England.			
			France.			
			Germany.			
			Ireland.			
			Italy.			
			Scotland.			
			Hungary.			
			Sweden.			
			Russia.			
			Holland.			
			Other foreign.			
			Not stated.			
			Number of (descendents "color black" design-ly figure in this column.			
			United States.			
			England.			
			France.			
			Germany.			
			Ireland.			
			Italy.			
			Scotland.			
			Hungary.			
			Sweden.			
			Russia.			
			Holland.			
			Other foreign.			
			Not stated.			
			Number of (descendents "color black" design-ly figure in this column.			
			United States.			
			England.			
			France.			
			Germany.			
			Ireland.			
			Italy.			
			Scotland.			
			Hungary.			
			Sweden.			
			Russia.			
			Holland.			
			Other foreign.			
			Not stated.			
			Number of (descendents "color black" design-ly figure in this column.			
			United States.			
			England.			
			France.			
			Germany.			
			Ireland.			
			Italy.			
			Scotland.			
			Hungary.			
			Sweden.			
			Russia.			
			Holland.			
			Other foreign.			
			Not stated.			
			Number of (descendents "color black" design-ly figure in this column.			
			United States.			
			England.			
			France.			
			Germany.			
			Ireland.			
			Italy.			
			Scotland.			
			Hungary.			
			Sweden.			
			Russia.			
			Holland.			
			Other foreign.			
			Not stated.			
			Number of (descendents "color black" design-ly figure in this column.			
			United States.			
			England.			
			France.			
			Germany.			
			Ireland.			
			Italy.			
			Scotland.			
			Hungary.			
			Sweden.			
			Russia.			
			Holland.			
			Other foreign.			
			Not stated.			
			Number of (descendents "color black" design-ly figure in this column.			
			United States.			
			England.			
			France.			
			Germany.			
			Ireland.			
			Italy.			
			Scotland.			
			Hungary.			
			Sweden.			
			Russia.			
			Holland.			
			Other foreign.			
			Not stated.			
			Number of (descendents "color black" design-ly figure in this column.			
			United States.			
			England.			
			France.			
			Germany.			
			Ireland.			
			Italy.			
			Scotland.			
			Hungary.			
			Sweden.			
			Russia.			
			Holland.			
			Other foreign.			
			Not stated.			
			Number of (descendents "color black" design-ly figure in this column.			
			United States.			
			England.			
			France.			
			Germany.			
			Ireland.			
			Italy.			
			Scotland.			
			Hungary.			
			Sweden.			
			Russia.			
			Holland.			
			Other foreign.			
			Not stated.			
			Number of (descendents "color black" design-ly figure in this column.			
			United States.			
			England.			
			France.			
			Germany.			
			Ireland.			
			Italy.			
			Scotland.			
			Hungary.			
			Sweden.			
			Russia.			
			Holland.			
			Other foreign.			
			Not stated.			
			Number of (descendents "color black" design-ly figure in this column.			
			United States.			
			England.			
			France.			
			Germany.			
			Ireland.			
			Italy.			
			Scotland.			
			Hungary.			
			Sweden.			
			Russia.			
			Holland.			
			Other foreign.			
			Not stated.			
			Number of (descendents "color black" design-ly figure in this column.			
			United States.			
			England.			
			France.			
			Germany.			
			Ireland.			
			Italy.			
			Scotland.			
			Hungary.			
			Sweden.			

TABLE 43.—TABULATION OF DEATHS FROM THE CLASSIFIED DISEASES, THE YEAR ENDING

IN THE STATISTICAL DIVISIONS OF THE STATE OF NEW JERSEY, FOR DECEMBER 31, 1910.

DEATHS IN RUTHERFORD.	AGE PERIODS.											
	Under one month.	Under 1 year, "not including under 1 mo."	One to five.	Five to ten.	Ten to fifteen.	Fifteen to twenty.	Twenty to twenty-five.	Twenty-five to thirty.	Thirty to thirty-five.	Thirty-five to forty.	Forty to forty-five.	Forty-five to fifty.
Scarlet Fever.....	7											
Beriberi.....	27			1								
Tuberculosis of the Lungs.....	28											
Tuberculous Meningitis.....	30					1						
Tuberculosis of Other Organs.....	34		1									
Cancer and Other Malignant Tumors of the Stomach, Liver.....	40											
Cancer and Other Malignant Tumors of the Female Genital Organs.....	42											
Cancer and Other Malignant Tumors of the Breast.....	43											
Chronic Rheumatism and Gout.....	48											
Other Diseases of the Spinal Cord.....	63											
Cerebral Hemorrhage, Apoplexy.....	64											
General Paralysis of the Insane.....	67											
Convulsions of Infants.....	71		1									
Chorea.....	72											
Acute Endocarditis.....	78											
Organic Diseases of the Heart.....	79	1	1	1								
Diseases of the Larynx.....	87											
Broncho-Pneumonia.....	91			1								
Pneumonia.....	92			1								
Pleurisy.....	93											
Pulmonary Congestion, Pulmonary Apoplexy.....	94											
Asthma.....	96											
Ulcer of the Stomach.....	102											
Other Diseases of the Stomach (Cancer excepted).....	103											
Dysentery and Enteritis (under 2 years).....	104	1										
Appendicitis and Typhlitis.....	108		1									
Other Diseases of the Intestines.....	110											
Cirrhosis of the Liver.....	113		1									
Acute Nephritis.....	119											
Bright's Disease.....	120					1						
Chyluria.....	121											
Congenital Debility, Icterus and Sclerema.....	131											
Suicide by Poison.....	155		3									
Suicide by Firearms.....	159											
Fracture by Fall.....	173					1						
Effects of Heat.....	179											
Electricity (Lightning excepted).....	181											

Total deaths, 69. Death-rate, 9.79.

AGE PERIODS.	SEX.	COLOR.	NATIVITY.	SOCIAL CONDITION.			
				Married.	Single.	Widowed.	Not stated.
Fifty to fifty-five.			United States.				
Fifty-five to sixty.			England.				
Sixty to seventy.			France.				
Seventy to eighty.			Germany.				
Eighty to ninety.			Ireland.				
Over ninety.			Italy.				
Not stated.			Scotland.				
Male.			Hungary.				
Female.			Sweden.				
Number of decedents "color black" designated by figure in this column.			Russia.				
			Holland.				
			Other foreign.				
			Not stated.				

TABLE 46.—TABULATION OF DEATHS FROM THE CLASSIFIED DISEASES, THE YEAR ENDING

DEATHS IN SUMMIT.	AGE PERIODS.											
	Under one month.	Under 1 year, "not including under 1 mo."	One to five.	Five to ten.	Ten to fifteen.	Fifteen to twenty.	Twenty to twenty-five.	Twenty-five to thirty.	Thirty to thirty-five.	Thirty-five to forty.	Forty to forty-five.	Forty-five to fifty.
Typhoid Fever.....	1											
Measles.....	6											
Whooping Cough.....	8		1									
Purulent Infection and Septicæmia.....	20											
Tuberculosis of the Lungs.....	38											
Tuberculous Meningitis.....	30		1									
Abdominal Tuberculosis.....	31			1								
Cancer and Other Malignant Tumors of the Stomach, Liver.....	40											
Cancer and Other Malignant Tumors of the Peritoneum, Intestines, Rectum.....	41											
Cancer and Other Malignant Tumors of the Skin.....	44											
Cancer and Other Malignant Tumors of Other Organs or of Organs not Specified.....	45											
Chronic Rheumatism and Gout.....	48											
Diabetes.....	50											
Alcoholism (Acute or Chronic).....	56											
Chronic Lead Poisoning.....	57		1									
Simple Meningitis.....	61		1									
Cerebral Hemorrhage, Apoplexy.....	64											
Softening of the Brain.....	65											
Paralysis Without Specified Cause.....	66											
Other Forms of Mental Alienation.....	68											
Neuralgia and Neuritis.....	73											
Acute Endocarditis.....	78											
Organic Diseases of the Heart.....	79											
Angina Pectoris.....	80											
Diseases of the Arteries, Atheroma, Aneurysm, etc.....	81											
Diseases of the Lymphatic System (Lymphangitis, etc.).....	84		1									
Scarfo-Pneumonia.....	85											
Pneumonia.....	92		1	1								
Pleurisy.....	93											
Pulmonary Congestion, Pulmonary Apoplexy.....	94											
Asthma.....	96											
Other Diseases of the Respiratory System (Tuberculosis excepted).....	98											
Ulcer of the Stomach.....	102											
Other Diseases of the Stomach (Cancer excepted).....	103											
Diarrhœa and Enteritis (under 2 years).....	104		7	2								
Diarrhœa and Enteritis (2 years and over).....	105											
Appendicitis and Typhlitis.....	108											
Hernias, Intestinal Obstructions.....	109		1									
Other Diseases of the Intestines.....	110											
Diseases of the Liver.....	113											
Other Diseases of the Digestive System (Cancer and Tuberculosis excepted).....	118		1									
Acute Nephritis.....	119											
Bright's Disease.....	120		1									
Other Diseases of the Annæxa.....	122											
Calculi of the Urinary Passages.....	123											
Gangrene.....	142											
Other Diseases of the Skin and Annæxa.....	145											
Congenital Debility, Icterus and Sclerema.....	151		3									
Senility.....	154											
Suicide by Poison.....	155											
Suicide by Hanging or Strangulation.....	157											

IN THE STATISTICAL DIVISIONS OF THE STATE OF NEW JERSEY, FOR DECEMBER 31, 1910.

AGE PERIODS.	SEX.	COLOR.	NATIVITY.											SOCIAL CONDITION.							
			United States.	England.	France.	Germany.	Ireland.	Italy.	Scotland.	Hungary.	Sweden.	Russia.	Molind.	Other foreign.	Not stated.	Married.	Single.	Widowed.	Not stated.		
Fifty to fifty-five.		Male.	2																		
Fifty to fifty-five.		Female.	1																		
Sixty to seventy.		Number of decedents "color black" designated by figure in this column.	6																		
Seventy to eighty.		Male.	2																		
Seventy to eighty.		Female.	9																		
Eighty to ninety.		Male.	2																		
Eighty to ninety.		Female.	5																		
Over ninety.		Male.	1																		
Over ninety.		Female.	2																		
Not stated.		Male.	1																		
Not stated.		Female.	1																		
Not stated.		Number of decedents "color black" designated by figure in this column.	3																		
Not stated.		Male.	2																		
Not stated.		Female.	9																		
Not stated.		Number of decedents "color black" designated by figure in this column.	5																		
Not stated.		Male.	1																		
Not stated.		Female.	2																		
Not stated.		Number of decedents "color black" designated by figure in this column.	3																		
Not stated.		Male.	1																		
Not stated.		Female.	1																		
Not stated.		Number of decedents "color black" designated by figure in this column.	2																		
Not stated.		Male.	1																		
Not stated.		Female.	1																		
Not stated.		Number of decedents "color black" designated by figure in this column.	2																		
Not stated.		Male.	1																		
Not stated.		Female.	1																		
Not stated.		Number of decedents "color black" designated by figure in this column.	2																		
Not stated.		Male.	1																		
Not stated.		Female.	1																		
Not stated.		Number of decedents "color black" designated by figure in this column.	2																		
Not stated.		Male.	1																		
Not stated.		Female.	1																		
Not stated.		Number of decedents "color black" designated by figure in this column.	2																		
Not stated.		Male.	1																		
Not stated.		Female.	1																		
Not stated.		Number of decedents "color black" designated by figure in this column.	2																		
Not stated.		Male.	1																		
Not stated.		Female.	1																		
Not stated.		Number of decedents "color black" designated by figure in this column.	2																		
Not stated.		Male.	1																		
Not stated.		Female.	1																		
Not stated.		Number of decedents "color black" designated by figure in this column.	2																		
Not stated.		Male.	1																		
Not stated.		Female.	1																		
Not stated.		Number of decedents "color black" designated by figure in this column.	2																		
Not stated.		Male.	1																		
Not stated.		Female.	1																		
Not stated.		Number of decedents "color black" designated by figure in this column.	2																		
Not stated.		Male.	1																		
Not stated.		Female.	1																		
Not stated.		Number of decedents "color black" designated by figure in this column.	2																		
Not stated.		Male.	1																		
Not stated.		Female.	1																		
Not stated.		Number of decedents "color black" designated by figure in this column.	2																		
Not stated.		Male.	1																		
Not stated.		Female.	1																		
Not stated.		Number of decedents "color black" designated by figure in this column.	2																		
Not stated.		Male.	1																		
Not stated.		Female.	1																		
Not stated.		Number of decedents "color black" designated by figure in this column.	2																		
Not stated.		Male.	1																		
Not stated.		Female.	1																		
Not stated.		Number of decedents "color black" designated by figure in this column.	2																		
Not stated.		Male.	1																		
Not stated.		Female.	1																		
Not stated.		Number of decedents "color black" designated by figure in this column.	2																		
Not stated.		Male.	1																		
Not stated.		Female.	1																		
Not stated.		Number of decedents "color black" designated by figure in this column.	2																		
Not stated.		Male.	1																		
Not stated.		Female.	1																		
Not stated.		Number of decedents "color black" designated by figure in this column.	2																		
Not stated.		Male.	1																		
Not stated.		Female.	1																		
Not stated.		Number of decedents "color black" designated by figure in this column.	2																		
Not stated.		Male.	1																		
Not stated.		Female.	1																		
Not stated.		Number of																			

TABLE 47.—TABULATION OF DEATHS FROM THE CLASSIFIED DISEASES, THE YEAR ENDING

DEATHS IN TOWN OF UNION.	AGE PERIODS.											
	Under one month.	Under 1 year, "not including under 1 mo."	One to five.	Five to ten.	Ten to fifteen.	Fifteen to twenty.	Twenty to twenty-five.	Twenty-five to thirty.	Thirty to thirty-five.	Thirty-five to forty.	Forty to forty-five.	Forty-five to fifty.
Puerperal Hemorrhage.....	135											
Puerperal Septicæmia.....	137											
Puerperal Albuminuria and Convulsions.....	138	1				1						
Gangrene.....	142											
Congenital Malformations (Stillbirths not included).....	150		1									
Congenital Debility, Icterus and Sclerema.....	151	16	1	1								
Other Diseases Peculiar to Early Infancy.....	152	1										
Suicide by Poison.....	155											
Suicide by Asphyxia.....	156				1							
Suicide by Firearms.....	159									1		
Burns (Conflagration excepted).....	167		1									
Traumatism by Fall.....	172		1									
Traumatism by Machines.....	174		1	1								
Traumatism by Other Crushing (Vehicles, Railroad, Landslides, etc.).....	175											
Cause of Death not Specified or Ill-defined.....	189	8	1									

Total deaths, 262. Death-rate, 11.99.

IN THE STATISTICAL DIVISIONS OF THE STATE OF NEW JERSEY, FOR DECEMBER 31, 1910—Continued.

AGE PERIODS.	SEX.	COLOR.	NATIVITY.	SOCIAL CONDITION.	
				Married.	Single.
Fifty to fifty-five.				1	1
Fifty-five to sixty.				1	1
Sixty to seventy.				1	1
Seventy to eighty.				1	1
Eighty to ninety.				1	1
Over ninety.				1	1
Not stated.				1	1
Male.				1	1
Female.				1	1
Number of decedents "color black" "neg." noted by figure in this column.				1	1
United States.				18	18
England.				3	3
France.				1	1
Germany.				1	1
Ireland.				1	1
Italy.				1	1
Scotland.				1	1
Hungary.				1	1
Sweden.				1	1
Russia.				1	1
Holland.				1	1
Other foreign.				1	1
Not stated.				1	1
Married.				1	1
Single.				1	1
Widowed.				1	1
Not stated.				1	1

TABLE 50.—TABULATION OF DEATHS FROM THE CLASSIFIED DISEASES, THE YEAR ENDING

DEATHS IN WEST HOBOKEN.	AGE PERIODS.											
	Under one month.	Under 1 year, "not including under 1 mo."	One to five.	Five to ten.	Ten to fifteen.	Fifteen to twenty.	Twenty to twenty-five.	Twenty-five to thirty.	Thirty to thirty-five.	Thirty-five to forty.	Forty to forty-five.	Forty-five to fifty.
Puerperal Diseases of the Breast.....		141										
Other Diseases of the Skin and Annexa.....	1	145										
Congenital Malformations (Stillbirths not included).....		150	1									
Congenital Debility, Icterus and Sclerema.....	20	151	3									
Other Diseases Peculiar to Early Infancy.....	1	152	1									
Senility.....		154										
Suicide by Poison.....		155										
Suicide by Asphyxia.....		156										
Suicide by Hanging or Strangulation.....		157										
Suicide by Firearms.....		158										
Burns (Conflagration excepted).....		167										
Absorption of Deleterious Gases (Conflagration excepted).....		168		2								
Traumatism by Other Crushing (Vehicles, Railroad, Landslides, etc.).....		175			1							
Other External Violence.....		186			1							
Ill-Defined Organic Disease.....		187										
Cause of Death not Specified or Ill-Defined.....		189										
	6		2									

Total deaths, 286. Death-rate, 10.90

IN THE STATISTICAL DIVISIONS OF THE STATE OF NEW JERSEY, FOR DECEMBER 31, 1910—Continued.

AGE PERIODS.	SEX.	COLOR.	NATIVITY.	SOCIAL CONDITION.		
				Married.	Single.	Widowed.
Fifty to fifty-five.						
Fifty-five to sixty.						
Sixty to seventy.						
Seventy to eighty.						
Eighty to ninety.						
Over ninety.						
Not stated.						
Male.	1					
Female.	1					
Number of decedents whose sex is designated by figure in this column.	12	10				
United States.						
England.			1			
France.			1			
Germany.			2			
Ireland.			1			
Italy.			4			
Scotland.			1			
Hungary.			1			
Sweden.			1			
Russia.			1			
Holland.			1			
Other foreign.			1			
Not stated.						
Married.				2		
Single.				1		
Widowed.				1		
Not stated.				6		

TABLE 51.—TABULATION OF DEATHS FROM THE CLASSIFIED DISEASES, THE YEAR ENDING

DEATHS IN WEST NEW YORK.	AGE PERIODS.										
	Under one month.	One to five.	Five to ten.	Ten to fifteen.	Fifteen to twenty.	Twenty to twenty-five.	Twenty-five to thirty.	Thirty to thirty-five.	Thirty-five to forty.	Forty to forty-five.	Forty-five to fifty.
	Under 1 year, "not including under 1 mo."										
Typhoid Fever.....	1										
Measles.....	6										
Scarlet Fever.....	3										
Whooping Cough.....	3	1									
Diphtheria and Croup.....	9										
Including Croup.....	9										
Dysentery.....	18	1									
Erysipelas.....	28	1							6	1	
Tuberculosis of the Lungs.....	30									2	
Tuberculous Meningitis.....	39										
Cancer and Other Malignant Tumors of the Buccal Cavity.....	40										
Cancer and Other Malignant Tumors of the Stomach, Liver.....	41										
Cancer and Other Malignant Tumors of the Peritoneum, Intestines, Rectum.....	42								2		
Cancer and Other Malignant Tumors of the Female Genital Organs.....	50									1	
Diabetes.....	57										
Chronic Lead Poisoning.....	61		2								
Simple Meningitis.....	64			1							
Cerebral Hemorrhage, Apoplexy.....	71	1	1								
Convulsions of Infants.....	78			1							
Organic Diseases of the Heart.....	79	1			1				1		
Diseases of the Larynx.....	87								1		
Acute Bronchitis.....	89	1	4	6						1	
Broncho-Pneumonia.....	91	1	4	6						1	
Pneumonia.....	92	1	4	2		1	1				
Pulmonary Congestion, Pulmonary Apoplexy.....	94										
Other Diseases of the Respiratory System (Tuberculosis excepted).....	103	1									
Other Diseases of the Stomach (Cancer excepted).....	104		8	2							
Hernias, Intestinal Obstructions.....	109	1	1							1	
Other Diseases of the Intestines.....	110									1	
Cirrhosis of the Liver.....	119								1		
Acute Nephritis.....	120	1							1	1	
Bright's Disease.....	142										
Gangrene.....	151	9	1								
Congenital Debility, Icterus and Sclerema.....	154										
Senility.....	155										
Suicide by Poison.....	156										
Suicide by Asphyxia.....	165										
Other Acute Poisonings.....	169										
Accidental Drowning.....	172								1	1	
Traumatism by Fall.....	175										
Traumatism by Other Crushing (Vehicles, Railroads, Landslides, etc.).....	189	8	1								
Cause of Death not Specified or Ill-defined.....											
Total deaths, 169. Death-rate, 12.46.											

IN THE STATISTICAL DIVISIONS OF THE STATE OF NEW JERSEY, FOR DECEMBER 31, 1910.

AGE PERIODS.	SEX.	COLOR.	NATIVITY.	SOCIAL CONDITION.		
				Married.	Single.	
Fifty to fifty-five.	Male.	Female.	United States.	Foreign.	Widowed.	Not stated.
Fifty to fifty-five.	1	1	England.	1	1	
Fifty-five to sixty.	1	1	France.	1	1	
Sixty to seventy.	1	1	Germany.	1	1	
Seventy to eighty.	1	1	Ireland.	1	1	
Eighty to ninety.	1	1	Italy.	1	1	
Over ninety.	1	1	Scotland.	1	1	
Not stated.	1	1	Hungary.	1	1	
	1	1	Sweden.	1	1	
	1	1	Russia.	1	1	
	1	1	Holland.	1	1	
	1	1	Other foreign.	1	1	
	1	1	Not stated.	1	1	
	1	1	Married.	1	1	
	1	1	Single.	1	1	
	1	1	Widowed.	1	1	
	1	1	Not stated.	1	1	
	1	1	Number of decedents "color black" designated by figure in this column.	1	1	

INFECTIOUS DISEASES REPORTED FOR EACH QUARTER DURING THE YEAR ENDING
JUNE 30, 1911.

NAME OF SANITARY DISTRICT.	DIPHTHERIA.				SCARLET FEVER.				TYPHOID FEVER.				SMALL-POX.			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
Absecon Town.....		3	1							1		2				
Acquackanonk Township.....	6	7	18				4			1						
Alexandria Township.....							1									
Allamuchy Township.....			1													
Allentown Borough.....		1														
Alloway Township.....			2		1											
Alpine Borough.....			1													
Andover Borough.....		1														
Asbury Park City.....	2	8	3	2	1	2	7	6	5	2	2	1				
Atlantic City.....	12	13	28	13	4	12	24	28	18	4	4	2				
Atlantic Highlands Borough.....			1				1		1							
Audubon Borough.....				2			1					1				
Ray Head Borough.....			1													
Bayonne City.....	49	109	75	27	25	22	24	40	1	5						
Belmester Township.....		1					3	1	2	1						
Belleville Township.....		4	4	5			3	9	1	2	1					
Belmar Borough.....	9	4	4	5			18		1	1		2				
Belvidere City.....					1				1	2						
Bergenfield Borough.....							4					1				
Berkley Township.....					1	2	4		1	2						
Bernards Township.....	2	14	1						1	2						
Bethlehem Township.....		1		1			1	4								
Beverly City.....									1	1						
Blairstown Township.....																
Bloomfield Town.....	2	6	7	7		9	9	13		1		1				
Bloomsbury Borough.....							1									
Boonton Town.....				2		3	3	1	1	1						
Bordentown City.....	1	16	6			2	1		2	4	3	1				
Bordentown Township.....				1												
Bound Brook Borough.....	1					1			2			2				
Bradley Beach Borough.....							1		1							
Branchburg Township.....				1												
Branchville Borough.....					1		8	1	2							
Brick Township.....							1		1							
Bridgeton City.....	5	30	18	9	1	7	8	8	3	5	7	1				
Bridgewater Township.....		1		1			9	1	2	2		1				
Buena Vista Township.....	1		1	1			10	1				1				
Burlington City.....	1	5		8			5	2	11	3						
Burlington Township.....																
Butler Borough.....							1									
Byram Township.....	1	2					1		1							
Caldwell Borough.....		2		1			3		1							
Camden City.....	41	84	58	61	10	48	23	19	12	9	3	2			1	
Cape May City.....		2	2				1		1							
Carlsbad Borough.....	1	1							2							
Cedar Grove Township.....							1	2	1							
Centre Township.....				4	3		1		1	1		1				
Chatham Borough.....							1									
Chatham Township.....	1															
Chester Township (Bur.).....	2	10	7	4	2	2	3					1				
Chester Township (Mors.).....												1				
Chesterfield Township.....			1				1									
Cinnaminson Township.....				1												
Clayton Borough.....		3	2			1	1	1	1	4	1	1				
Clementon Township.....																
Cliffside Park Borough.....	3	1	4	1					1							
Clinton Township.....	3	1	5				1		1	8	1					
Closter Borough.....				1												
Collingswood Borough.....	1		4	4			4	2		3	2					
Commercial Township.....	1	4		3			1		1							
Cranbury Township.....		1					1									
Cranford Township.....	1	3	1			3	6	1	1		1	1				
Cresskill Borough.....			1				7		4							
Derfield Township.....		1		2			6	7		4						
Delaware Township (Cam.).....	1		2						4							
Delford Borough.....							2	1		2						
Delran Township.....		1		1			1		1							
Demarest Borough.....	1						1		1							

INFECTIOUS DISEASES REPORTED FOR EACH QUARTER DURING THE YEAR ENDING
JUNE 30, 1911—Continued.

NAME OF SANITARY DISTRICT.	DIPHTHERIA.				SCARLET FEVER.				TYPHOID FEVER.				SMALL-POX.			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
Deptford Township.....	1		1	1		2	1			4						
Dover City.....	4	3	6	3	6	8	2	7	4	4	1					
Dover Township.....	1								1					1	2	
Downe Township.....						1	1	1	6	8		1				
Dumont Borough.....		2														
Dunellen Borough.....			3	6												
East Brunswick Township.....			1	1					1	1						
East Greenwich Township.....			1	1								1	4			
East Newark Borough.....	2	3	3	4	7				5	1		1				
East Orange City.....	6	35	22	9	25	56	37	10	11	1	3					
East Rutherford Borough.....	1	4	1	1					2	1						
East Windsor Township.....												5		1		
Eaton Township.....																
Edgewater Borough.....									1	1						
Egg Harbor City.....	28	60	39	45	32	42	138	150	1	17	3	5				
Elizabeth City.....																
Elk Township.....	1	1	1	1												
Elmer Borough.....							4					3				
Emerson Borough.....		5														
Englewood City.....	1		2	1	1	1	6	3	6	1	1	2				
Englishtown Borough.....																
Essex Fells Borough.....							2									
Evesham Township.....	1	1					1		1							
Fairfield Township.....																
Fairview Borough.....		1	2	3					2	2						
Fanwood Borough.....																
Farmingdale Borough.....									1							
Fieldsboro Borough.....	1															
Flemington Borough.....																
Florham Park Borough.....																
Florence Township.....		8	9	1			1	1	9	16	5	6	8			
Fort Lee Borough.....	4	1	1	2	1		2	6	6							
Frankford Township.....																
Franklin Township (Ber.).....									1	4	2					
Franklin Township (Glov.).....	1	3														
Franklin Township (Hun.).....									1							
Franklin Township (Som.).....	1	2	2						2	2						
Franklin Township (War.).....																
Fredon Township.....																
Freehold Town.....		2	2	3					1		1					
Freehold Township.....																
Frenchtown Borough.....																
Garfield Borough.....	1	12	3	4	2		10	11		1						
Garwood Borough.....																
Glassboro Township.....									2	1						
Glen Ridge Borough.....									3							
Glen Rock Borough.....																
Gloucester City.....	1	7			5	2	2	2	1	7	4	4	4	5		
Gloucester Township.....																
Green Township.....																
Greenwich Township (Cum.).....																
Greenwich Township (War.).....																
Guttenberg Town.....	5	1	2	4			2		1	1	1	1				
Hackensack City.....	19	6	3	3	6	9	24	7	8	5	5	1				
Hackettstown Town.....		2			2	3	2	2		1						
Haddon Township.....																
Haddonfield Township.....		1	1	3			1									
Haddon Heights Borough.....																
Haledon Borough.....	1	14			10				2							
Hamilton Township (Atl.).....	5								8							
Hamilton Township (Mer.).....	1	8	5	5	2		12	4	7	2	3	1				
Hammoncton Town.....																
Hampton Borough.....		7		1												
Hanover Township.....									6							
Hardwick Township.....																
Hardyston Township.....									1	5		2	3	1	1	
Harmony Township.....	3	3	4						1	1</						

INFECTIOUS DISEASES REPORTED FOR EACH QUARTER DURING THE YEAR ENDING
 JUNE 30, 1911—Continued.

NAME OF SANITARY DISTRICT.	DIPHTHERIA.				SCARLET FEVER.				TYPHOID FEVER.				SMALL-POX.			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
Prospect Park Borough.....	2	10	1	3	2	1	1	26								
Rahway City.....		5	8	7		2	16	30		4	2					
Randolph Township.....							4	2								
Raritan Borough.....	3	1			2		3	1	1	1						
Raritan Township (Hun.).....		1				2		1			1					
Raritan Township (Mon.).....		2				1										
Readington Township.....			2			1										
Red Bank Town.....	2	2	5	6	1	1	2	2		2						
Ridgefield Borough.....	2	2	1			3	8	2		2						
Ridgefield Park Village.....	1	1	6	7			3	7				1				
Ridgewood Village.....		1	4	2			3	7								
Riverside Borough.....		1	2	2	1	1	1	1								
Riverside Township.....		2				2	2	2	1	1						
Riverton Borough.....			2													
Rockaway Borough.....			1	1			2									
Rockaway Township.....						3	2	3	1							
Roosevelt Borough.....	3	7	2	2		7	9	4								
Roselle Borough.....	1	2	2	1	2	3	21	1								
Roselle Park Borough.....		22		2	1		5	1								
Roxbury Township.....	7	1			2		10	1								
Rutherford Borough.....	3	3	1		4	1	6	14	1	1	2					
Saddle River Borough.....									1							
Saddle River Township.....		2			1		2									
Salem City.....	1	4	9			5	5									
Sayreville Township.....	3	5	2	1		5	1	1	1	2						
Sayreville Borough.....	3	5	2	1		5	1	1								
Secaucus Borough.....		1				8	4									
Shrewsbury Township.....					4				2							
Somerville Borough.....	3	3	5		1		2	5	5	1	1					
Southampton Township.....								2	4	3						
South Amboy City.....		5	2	2												
South Bound Brook Borough.....			1				3									
South Brunswick Township.....		2	2		1	1	6	3								
South Orange Township.....	3		1	1	1	2		5	5							
South Orange Village.....	1	1	1		2	3	6	5	7	4	2					
South River Borough.....		1	3			1	8	1	5	1						
Sparta Township.....								1	1	1						
Spotswood Borough.....							4			1						
Springfield Township (Bur.).....						3										
Springfield Township (U.).....							2	1		1						
Spring Lake Borough.....										3						
Stafford Township.....										1						
Stillwater Township.....								1								
Stockton Borough.....		1	1	1					1							
Stow Creek Township.....	1	1	1													
Summit City.....		3	2	3		3	10	7	10	7						
Sussex Borough.....							5	2		3						
Swedesboro Borough.....		1	1													
Tabernacle Township.....			1												1	
Teesuck Township.....	2	6														
Tenafly Borough.....		5			2			1	1	1						
Tewksbury Township.....				1					1	1						
Totowa Borough.....			3	1												
Town of Union.....	38	34	15	22	3	28	14	11	4	5						
Trenton City.....	15	52	41	23	26	62	38	45	98	55	51					
Union Township (Ber.).....		5	4	3	1	2	1	5	1							
Union Township (Hun.).....		1	1	4	3			1								
Union Township (Ocean).....	1					1										
Union Township (Union).....		2	1	1		6	13	1	1							
Upper Freehold Township.....		2				1	8	1								
Upper Penns Neck Township.....															4	
Upper Pittsgrove Township.....				4			1				1					
Vernon Township.....		1					1	4		4						
Verona Borough.....	1	3				2	1	4		2						
Winland Borough.....	1	2	4	1	2	4	6	6	2	2						
Voorhees Township.....		2								1						
Wall Township.....				1	2				3	1						
Wallington Borough.....	1	1	1	1						2						

 INFECTIOUS DISEASES REPORTED FOR EACH QUARTER DURING THE YEAR ENDING
 JUNE 30, 1911—Continued.

NAME OF SANITARY DISTRICT.	DIPHTHERIA.				SCARLET FEVER.				TYPHOID FEVER.				SMALL-POX.			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
Washington Borough.....			1			8	1				5	1	1			
Washington Township (Bur.).....						1										
Washington Township (Glen.).....			2								3		1			
Washington Township (Mer.).....	1					1	1	4								
Washington Township (Mor.).....			3	4		1	1				1					
Washington Township (War.).....						4										
Waterford Township.....												2				
Wayne Township.....	4	3				1		3								
Weehawken Township.....	4	3	6	4	1		12	4	1	1	1					
Wenonah Borough.....	2										1	1				
Westampton Township.....						1		4	5	2						
Westampton Township.....						1		7	2	2	2	1				
Westfield Township.....	1	1														
West Hoboken Town.....	28	32	18	50	3	4	20	33	3			1				
West Milford Town.....		1	1	2			3	1			3	1				
West New York Town.....	32	31	12	3		15	9	4	1		4	1				
West Orange Town.....	4	4	1	7	3	7	27	31	2	1		1				
West Windsor Township.....	2		2			2		2			2	1				
Westwood Borough.....		3	2	1		3	1	1	1	2	1					
Wharton Borough.....																
Wildwood Borough.....			1	1				2								
Winslow Borough.....		1						3	2		7					
Woodbine Borough.....																
Woodbridge Township.....	1	11	1	3	1	5	1	1	3	1						
Woodbury City.....	3	2	2	2		2	4	1	4		1	2				
Woodcliff Borough.....	6															
Wood Ridge Borough.....		2														
Woodstown Borough.....																
Total cases reported by quarters.....	978	2124	1518	1264	558	1153	1881	1743	646	526	220	225	9	5	30	3
Total cases reported by year.....					5884			5335				1617				47

List of Licensed Health Officers and Sanitary Inspectors.

Following is a list of the persons who have successfully passed the examinations provided for in the act approved April 8th, 1903:

HEALTH OFFICERS.

†Budd H. Obert.....	Asbury Park, N. J.
†Hiram Williams, M.D.....	Passaic, N. J.
Alex. Marcy, Jr., M.D.....	Riverton, N. J.
†Wm. S. Green, M.D.....	Paterson, N. J.
Walter Taylor, M.D.....	Jersey City, N. J.
Maria M. Vinton, M.D.....	East Orange, N. J.
†Edward Guion, M.D.....	Atlantic City, N. J.
†Fred W. Sell, M.D.....	Rahway, N. J.
Howard L. Baumgartner.....	Asbury Park, N. J.
Lewis L. Sharp, M.D.....	Palmyra, N. J.
†Ferdinand N. Sauer, M.D.....	Jersey City, N. J.
†George T. Tracy, M.D.....	Beverly, N. J.
†Chester H. Wells.....	Montclair, N. J.
†Duncan W. Blake, Jr., M.D.....	Gloucester City, N. J.
Samuel D. Mayhew, M.D.....	Bridgeton, N. J.
†John O'Brien, Jr.....	Montclair, N. J.
†James A. Exton, M.D.....	Arlington, N. J.
Frank H. Streightoff.....	Montclair, N. J.
G. W. Fithian, M.D.....	Perth Amboy, N. J.
†Henry MacDonald.....	Newark, N. J.
†Leon R. Thurlow.....	Plainfield, N. J.
†Edward B. Rogers, M.D.....	Collingswood, N. J.
†J. I. Hoverder, M.D.....	Atco, N. J.
W. U. Kurtz, M.D.....	Asbury Park, N. J.
John K. Adams, M.D.....	Orange, N. J.
William W. Brooke, M.D.....	Bayonne, N. J.
†Thomas J. Duffield.....	Asbury Park, N. J.
Henry D. Abbott, M.D.....	Bayonne, N. J.
Eugene H. Sullivan.....	Orange, N. J.
†J. Alex. Browne, M.D.....	Paterson, N. J.
Perkins Boynton.....	Little Falls, N. J.
Ellsmore Stites, M.D.....	Bridgeton, N. J.
†Marcus W. Newcomb, M.D.....	Burlington, N. J.
Charles P. Eaton.....	Jersey City, N. J.
†V. M. D. Marcy, M.D.....	Cape May, N. J.
†Milton L. Somers, M.D.....	Atlantic City, N. J.
†Harry H. Petit, M.D.....	Ridgewood, N. J.

† In the service of the local board of health.
‡ Deceased.

†John T. Connelly.....	Bayonne, N. J.
†Charles J. Larkey.....	Bayonne, N. J.
†T. Lee Adams.....	Ocean City, N. J.
†R. H. Parsons, M.D.....	Mount Holly, N. J.
Jay E. Kilpatrick.....	Montclair, N. J.
William Schuler.....	Orange, N. J.
William G. Schauflier, M.D.....	Lakewood, N. J.
†William H. Shippis, M.D.....	Bordentown, N. J.
Morris W. Clouse, M.D.....	Kearny, N. J.
†Joseph J. Craven, M.D.....	Jersey City, N. J.
†Selskar M. Gunn.....	Orange, N. J.
Joseph Payne, M.D.....	Midland Park, N. J.
†Jay G. Foose.....	Montclair, N. J.
John J. Broderick, M.D.....	Jersey City, N. J.
Henry H. Brinkerhoff, M.D.....	Jersey City, N. J.
†George W. Lawrence, M.D.....	Lakewood, N. J.
†James J. Hagan.....	Jersey City, N. J.
†Charles S. Mills, M.D.....	Riverton, N. J.
†Joseph Wantoch, M.D.....	Carteret, N. J.
†William H. Iszard, M.D.....	Camden, N. J.
Ralph O. Clock, M.D.....	Burlington, N. J.
E. Irving Cronk, M.D.....	New Brunswick, N. J.
John L. Lund, M.D.....	Perth Amboy, N. J.
†Charles McNabb.....	Bound Brook, N. J.
J. C. Loper, M.D.....	Bridgeton, N. J.
Henry C. James, M.D.....	Mays Landing, N. J.
A. M. Heron, M.D.....	Lakewood, N. J.
George H. Taylor, M.D.....	Maplewood, N. J.
L. F. Meloney, M.D.....	Clifton, N. J.
I. N. Griscom, M.D.....	Ocean City, N. J.
James L. Oliff.....	Plainfield, N. J.
†Harriet O. Mattison.....	Plainfield, N. J.
†Lester Hamblet.....	Asbury Park, N. J.
†John H. Winslow, M.D.....	Vineland, N. J.
†Grant P. Curtis, M.D.....	Town of Union, N. J.
†Robert N. Hoyt.....	Summit, N. J.
†J. Scott MacNutt.....	Orange, N. J.
William D. Sayre, M.D.....	Red Bank, N. J.
William A. Westcott, M.D.....	Berlin, N. J.
H. W. Ingling, M.D.....	Freehold, N. J.
Fred. H. Stover.....	Boston, Mass.
Nelson Elliott, M.D.....	Passaic, N. J.
William M. Barnes, M.D.....	Millburn, N. J.
John A. C. Tull, M.D.....	Ventnor, N. J.
William C. Craig, M.D.....	Ridgewood, N. J.
Charles B. Bleasby, M.D.....	Garfield, N. J.
Josiah Meigh, M.D.....	Bernardsville, N. J.
George T. Palmer.....	Trenton, N. J.
Carl T. Pomeroy.....	Plainfield, N. J.
Fritz M. Arnolt.....	Hackensack, N. J.
Joseph C. Saile.....	Bloomfield, N. J.

PLUMBING INSPECTORS.

†Henry B. Francis.....	Camden, N. J.
Joseph Sonnenberg.....	Irvington, N. J.
Conrad Deuchler.....	Newark, N. J.

† In the service of the local board of health.

Charles M. Whelan.....	Trenton, N. J.
†William F. Brode.....	Atlantic City, N. J.
†Thomas D. Clark.....	Woodbury, N. J.
Edward J. Kelly.....	Jersey City, N. J.
Thomas F. Harris.....	Orange, N. J.
†G. H. Soult.....	Ridgewood, N. J.
Henry A. W. Smith.....	Ocean City, N. J.
Hugh F. Parle.....	Jersey City, N. J.
R. LeRoy Skillman.....	Newark, N. J.
Andrew McGookin, Jr.....	Newark, N. J.
Frederick W. Nichols.....	Newark, N. J.
Luke J. Devine.....	Elizabeth, N. J.
James Barnard.....	Trenton, N. J.
Frank H. Fitzgeorge.....	Trenton, N. J.
George F. Shafer.....	Hackensack, N. J.
Charles F. West.....	Gloucester City, N. J.
Bernard B. Kelley.....	New Brunswick, N. J.
P. W. Borrows.....	Ridgefield Park, N. J.
Arthur G. Reeves.....	Cape May City, N. J.
James H. Kiernan.....	Jersey City, N. J.
Edward A. Sullivan.....	Newark, N. J.
Gustave A. Albiez.....	Newark, N. J.
William F. Specht, Jr.....	Atlantic City, N. J.
Jacob Kull.....	Newark, N. J.
Eugene Lau.....	Newark, N. J.
Peter A. Degnan.....	Newark, N. J.
David Entwistle.....	Jersey City, N. J.
Tunis Lool.....	Lodi, N. J.
James A. Marnell.....	Hoboken, N. J.
Rudolph Riemenschneider.....	Town of Union, N. J.
W. J. Large.....	Vineland, N. J.
Charles Steller.....	Town of Union, N. J.
Martin D. Karl.....	Garfield, N. J.
Adam J. Hammer.....	Elizabeth, N. J.
Leavett F. Kelley.....	Newark, N. J.
W. George Lambert.....	Riverside, N. J.
Martin V. Driscoll.....	Jersey City, N. J.
Herbert J. Mason.....	Vineland, N. J.
Charles F. Shaw.....	Collingswood, N. J.
William F. Ziegler.....	West Hoboken, N. J.
Archibald A. Kafer, Jr.....	Bordentown, N. J.
Edward A. Dugan.....	Gloucester City, N. J.
Cornelius V. Carty.....	East Rutherford, N. J.
Frederick J. Dyer.....	Grantwood, N. J.
Frank S. Klevitt.....	Passaic, N. J.
G. E. Bangs.....	West Hoboken, N. J.
Jason H. Wildrick.....	Washington, N. J.
Clarence B. Slack.....	Trenton, N. J.
Richard W. L. Osthoff.....	Bogota, N. J.
Joseph M. Loeffler.....	Newark, N. J.
George M. Crawley, Jr.....	Newark, N. J.
Conrad C. Hoffmeier.....	West Hoboken, N. J.

SANITARY INSPECTORS OF FIRST CLASS.

†Fred W. Hering.....	Jersey City, N. J.
†George W. Gilmore.....	Newark, N. J.
†Fred C. Robertson, M.D.....	Jersey City, N. J.

† In the service of the local board of health.

†John T. McClure.....	Harrison, N. J.
†John G. Taylor.....	Dover, N. J.
Charles E. Bellows.....	Bridgeton, N. J.
†Albert E. Geissler.....	Kearny, N. J.
Thomas Ainge.....	Lansing, Mich.
Charles S. Voorhis.....	Palmyra, N. J.
†Lewis E. Boutillier.....	Newark, N. J.
†Joseph C. Salle.....	Bloomfield, N. J.
†Casper Benz.....	Newark, N. J.
†Robert W. Meeker.....	Plainfield, N. J.
†John K. Bennett, M.D.....	Gloucester City, N. J.
William H. Addis.....	Plainfield, N. J.
William W. Heberton, M.D.....	South Orange, N. J.
Eric Ordell.....	Newark, N. J.
John Greaves.....	Jersey City, N. J.
†John E. Rowe, D.V.S.....	Summit, N. J.
George N. Smith.....	Newark, N. J.
†Frank Dencklan.....	Plainfield, N. J.
J. H. C. Hunter.....	Dover, N. J.
Chauncey V. Bunnell.....	Jersey City, N. J.
†Charles F. Conrad.....	Newark, N. J.
Percy W. Sipp.....	Newark, N. J.
†H. S. Winterhalter.....	Bayonne, N. J.
Jay E. Kilpatrick.....	Montclair, N. J.
W. J. E. Seder.....	Newark, N. J.
†Alonzo Brower.....	Freehold, N. J.
†Frederick E. Wilson.....	Bayonne, N. J.
David R. Thompson.....	Delaware City, Del.
†Jay G. Foose.....	Montclair, N. J.
†William H. Lowe, D.V.S.....	Paterson, N. J.
Charles W. Harreys, M.D.....	Ridgewood, N. J.
Joseph C. Bitler, M.D.....	Hammonton, N. J.
†Lynford E. Tuttle, M.D.V.....	Benardsville, N. J.
James L. Ollif.....	Plainfield, N. J.
J. J. Reason, M.D.....	Carteret, N. J.
†Alfred C. Benedict, M.D.....	South Orange, N. J.
†John H. Winslow, M.D.....	Vineland, N. J.
†Harry R. Ingalls.....	Asbury Park, N. J.
Edward F. Flynn.....	Newark, N. J.
†Elvia Scott.....	South Orange, N. J.
Harris Day, M.D.....	Chester, N. J.
A. I. Goehrig.....	Trenton, N. J.
Harry E. Moffett.....	Newark, N. J.
Irwin C. Dakin.....	Newark, N. J.
William Gleuck, Jr.....	Newark, N. J.
Fred S. Ball, M.D.....	Lakewood, N. J.
†Felix McGee.....	Millburn, N. J.
Charles E. Divine.....	Newark, N. J.
†Charles McNabb.....	Bound Brook, N. J.
James J. Waters.....	Newark, N. J.
†John L. Lund, M.D.....	Perth Amboy, N. J.
Edward Mulvaney, M.D.....	Jersey City, N. J.
John J. Magner, M.D.....	Jersey City, N. J.
Edward J. Devitt.....	Jersey City, N. J.
†J. L. Ebbels.....	Montclair, N. J.
H. G. Eakin.....	Union Hill, N. J.
Joseph R. Bartlett.....	Atlantic City, N. J.
Frank V. Wilkinson.....	Newark, N. J.

† In the service of the local board of health.

Edwin E. Taber.....	Long Branch, N. J.
†John A. Manson.....	Dover, N. J.
†Lester J. Hamblet.....	Asbury Park, N. J.
Clarence A. Lamont.....	Asbury Park, N. J.
Alex. M. Heron, M.D.....	Lakewood, N. J.
Abram A. Lydecker, M.D.....	Haledon, N. J.
Howard H. Huffert.....	Newark, N. J.
†Sylvester Utter, M.D.....	Paterson, N. J.
F. Wm. Stahuber.....	Trenton, N. J.
William Morris.....	Roselle Park, N. J.
John W. Garey.....	Atlantic City, N. J.
†James P. McNair.....	Paterson, N. J.
Thomas J. Steele.....	Jersey City, N. J.
Walter B. Delaney.....	Jersey City, N. J.
John C. Harnett.....	Jersey City, N. J.
Henry A. Bonyng, M.D.....	Ridgewood, N. J.
C. H. W. Van Sciver.....	Burlington, N. J.
†Frank S. Harris.....	Salem, N. J.
Stanley S. Williams.....	Newark, N. J.
Patrick J. Brogan.....	Newark, N. J.
Samuel Bachman.....	Newark, N. J.
†Sadie H. Layton.....	Asbury Park, N. J.
†Frank A. Frederick.....	West Hoboken, N. J.
Andrew Carney, Jr.....	North Plainfield, N. J.
†John J. Belbey.....	Morristown, N. J.
Gustavus E. Freideman.....	Newark, N. J.
†Ralph L. Huttenloch.....	Montclair, N. J.
William McKeon.....	Paterson, N. J.
†H. W. Hartman, M.D.....	Keyport, N. J.
†John T. McClure, Jr.....	Harrison, N. J.
Adolph O. Elsasser.....	Newark, N. J.
John Q. Larkin.....	Jersey City, N. J.
H. L. Harley, M.D.....	Pleasantville, N. J.
Frederick W. Nichols.....	Newark, N. J.
George C. Losey.....	Washington, N. J.
Clarence I. Palmer.....	Newark, N. J.
Fritz M. Arnolt.....	Albany, N. Y.
B. F. Seaman, M.D.....	Raritan, N. J.
George A. West.....	Raritan, N. J.
C. P. Deyoe, M.D.....	Ramsey, N. J.
J. Alonzo Beek, M.D.....	Gloucester City, N. J.
Frederick A. Stetter.....	Asbury Park, N. J.
Edward A. Cleary.....	Newark, N. J.
Thomas P. Walsh.....	Newark, N. J.
Thomas F. Boles.....	Newark, N. J.
William B. Palmer.....	Orange, N. J.
Frank Brouwer, M.D.....	Toms River, N. J.
Thomas J. Carter.....	Newark, N. J.
Charles A. Keating, M.D.....	Paterson, N. J.

SANITARY INSPECTORS OF SECOND CLASS.

†Charles Cunningham, M.D.....	Hammonton, N. J.
†Franklin P. Vanlier.....	Woodstown, N. J.
†Joseph J. Clickenger.....	Irvington, N. J.
†J. C. Shinn, M.D.....	Jamesburg, N. J.

† In the service of the local board of health.

George Wildman	Belmar, N. J.
John M. Benschel	Pleasantville, N. J.
George S. Everett	Linden, N. J.
Frederick J. Dyer	Grantwood, N. J.

SANITARY INSPECTORS OF THIRD CLASS.

David Jamieson	Gloucester City, N. J.
†Robert A. Hirner	Woodbridge, N. J.
†Robert Dickson	Fair Haven, N. J.
T. Nelson Lillagore	Ocean Grove, N. J.
William B. Smith	Belleville, N. J.
Adrian Hommell	Asbury Park, N. J.
William B. Davis	Morris Plains, N. J.

MEAT INSPECTORS.

†G. F. Harker, D.V.S.	Trenton, N. J.
†Richard W. Hewitt, D.V.S.	Camden, N. J.
Willet H. Cooper, D.V.S.	Trenton, N. J.
†Albert T. Sellers, D.V.S.	Camden, N. J.

† In the service of the local board of health.
‡ Deceased.

List of Sanitary Districts

With Names and Addresses of Officers and Members.

CITIES.

Absecon, Atlantic county; population, 781. Lewis G. Bonfield, President; A. J. Craven, Martin Spiekerman, Samuel Johnson, Clerk and Registrar; C. C. Allen, Inspector.

Asbury Park, Monmouth county; population, 10,150. Theodore H. Berlinger, President; A. S. Burton, H. C. Millar, Henry Mitchell, M.D., D. W. Sexton, George Turner, I. R. Taylor, B. H. Obert, Secretary and Registrar; H. R. Ingalls and L. J. Hamblet, Inspectors.

Atlantic City, Atlantic county; population, 46,150. Elwood S. Johnson, President; W. S. Lawmaster, Harry J. Mulock, Lewis B. Glenn, Alfred W. Bailey, M.D., William B. Dill, Secretary; John J. Mahoney, Registrar; Edward Gulon, M.D., Health Officer; Harry C. Beck, Thos. W. Clement, William F. Brode, W. F. Specht, Jr., Benj. H. Sooy, John W. Garey, Chas. McDowell and Theo. Voelmla, Inspectors.

Bayonne, Hudson county; population, 55,545. John J. Cain, President; George P. Oliver, Jerry Lisk, John J. Knight, Herman Klein, Louis Epstein, Eugene Macchi, John Harding, Secretary; John T. Connelly, M.D., Health Officer; Chas. J. Larkey, Assistant Health Officer; John Norwich, Inspector.

Beverly, Burlington county; population, 2,140. R. P. Hains, President; Burton Kiple, Wm. B. Jester, James D. Fish, Geo. A. Smith, Chas. J. Parsons, Clerk and Registrar; Geo. T. Tracy, Inspector.

Bordentown, Burlington county; population, 4,250. Samuel E. Burr, President; S. R. Magee, D. R. Brown, J. W. Higgins, Edwin L. Thompson, Wm. M. Kester, Clerk; Jos. R. Malone, Registrar; Wm. H. Shipp, M.D., Health Officer; Amos P. Thorn, Inspector.

Bridgeton, Cumberland county; population, 14,209. Frank S. McKee, Jr., President; W. H. Ballenger, Sydney E. Williams, Frederic S. Conner, Harry Antennette, John H. Moore, M.D., Secretary; Jacob B. Jones, Registrar; John C. Loper, M.D., Inspector.

Burlington, Burlington county; population, 8,336. Franklin S. Carter, President; Neal D. Keeler, William R. Schuyler, George W. Shinn, Thomas S. Mooney, Clerk and Registrar; M. W. Newcomb, Health Officer; C. H. Van Sciver, Inspector.

Camden, Camden county; population, 94,538. H. H. Davis, M.D., President; R. H. Gaskill, Wm. I. Kelchner, M.D., S. G. Bushey, M.D., M. K. Mines, M.D., M. F. Middleton, M.D., E. Wilmer Collins, Eugene B. Roberts, Clerk; Wm. D. Brown, Registrar; John F. Leavitt, M.D., Henry

B. Francis, Jos A. Starr, Wm. H. Iszard, M.D., and G. H. Robinson, Inspectors.

Cape May City, Cape May county; population, 2,471. A. L. Leach, M.D., President; W. R. Shepherd, Geo. L. Lovett, Robt. S. Hand, Wm. Porter, Clerk and Registrar; Dr. V. M. D. Marcy, Health Officer; Arthur G. Reeves, Plumbing Inspector.

East Orange, Essex county; population, 34,371. Roger H. Butterworth, President; Frank B. Lane, M.D., Ralph H. Hunt, M.D., DeWitt Cook, Jr., Harvey Mott, Wm. T. Bowman, Secretary and Health Officer; Lincoln E. Rowley, Registrar; Edward W. Lindsley, Inspector.

Egg Harbor City, Atlantic county; population, 2,181. August A. Breder, President; Henry G. Regensburg, Henry Otto, Dr. M. Frank, Wm. Morgenweck, Jr., Clerk and Registrar.

Elizabeth, Union county; population, 73,409. John W. Whelan, President; J. L. Bauer, Charles Brown, Edw. W. Whelan, T. E. Dolan, M.D., J. S. Green, M.D., S. M. Williams, John F. Kenah, Clerk and Registrar; L. J. Richards, Health Officer; P. J. Connell and Henry Toole, Inspectors.

Englewood, Bergen county; population, 9,924. Geo. B. Best, President; Thomas W. Lydecker, Edward Koster, F. C. Bradner, Gilliam D. Bogert, Clerk; John A. Manson, Inspector.

Gloucester City, Camden county; population, 9,462. Thomas McNulty, President; John Beaston, J. F. Blandy, Samuel Shuster, Wm. F. McLennan, M.D., Stokes Prickett, A. D. Koenemann, Clerk; Charles F. West, Registrar; John K. Bennett, M.D., Inspector; Edward A. Dugan, Plumbing Inspector.

*Hoboken, Hudson county; population, 70,324. Joseph Tucker, Clerk and Registrar.

*Jersey City, Hudson county; population, 267,779. James J. Hagan, Secretary and Health Officer.

Lambertville, Hunterdon county; population, 4,657. Edward W. Closson, M.D., President; William R. Bowne, Oliver C. Holcombe, Harry K. Kramer, James Moonan, Lewis C. Williams, M.D., James H. Reynolds, Clerk and Registrar; John L. Coryell and Charles S. Closson, Inspectors.

*Long Branch, Monmouth county; population, 13,298. E. B. Blaisdell, Secretary and Registrar.

Margate City, Atlantic county; population, 129. Thomas Bell, President; William Whittaker, Gottlieb Strotbeck, John Gertzen, James Boice, Clerk.

Millville, Cumberland county; population, 12,451. John W. Wade, M.D., President; H. G. Miller, M.D., George Thorpe, James R. Headley, L. H. Hogate, Clerk and Registrar; Frank Bullock, Inspector; John D. Brandriff, Plumbing Inspector.

Newark, Essex county; population, 347,469. H. C. H. Herold, M.D., President; T. W. Corwin, M.D., James T. Wrightson, M.D., Charles W. Baker, George L. Warren, M.D., Timothy F. Foyle, Frank B. Meeker, M.D., Henry C. Vance, Otto B. Schalk, John H. McLean, David D. Chandler, Secretary and Health Officer.

*New Brunswick, Middlesex county; population, 23,388. Elmer J. McMurtrie, Secretary and Registrar.

Northfield City, Atlantic county; population, 866. Wm. P. Oxley,

* No report received.

President; Eugene Somers, J. L. McConnell, Smith's Landing; Joseph Lake, Smith's Landing; E. C. Duberson, Clerk and Registrar.

*Ocean City, Cape May county; population, 1,950. T. Lee Adams, Clerk, Registrar and Inspector.

Orange, Essex county; population, 29,630. G. H. Richards, M.D., President; D. W. Poor, M.D., Bridgewater M. Arnold, Ludlow B. Clark, John T. Davis, Louis M. Sanders, Oliver S. Williams, J. Scott MacNutt, Secretary, Registrar and Health Officer; Thomas F. Harris, Richard Savage and William A. Webber, Inspectors.

Passaic, Passaic county; population, 54,773. Frank H. Field, M.D., President; Wm. L. Lyall, Geo. H. Michels, Mason R. Strong, Edwin De Baum, M.D., V. G. Becska, M.D., G. J. Van Schott, Sr., M.D., Virginia Hand, Clerk; Thomas R. Watson, Registrar; Nelson Elliott, M.D., Health Officer; Frank Kievitt, J. Payne Lowe, D.V.S., John N. Ryan, M.D., and Jacob Cooper, Inspectors.

Paterson, Passaic county; population, 125,600. John L. Leal, M.D., President; Franklin Van Winkle, James F. Briody, M.D., James J. Maher, Francis H. Todd, M.D., Jas. P. McNair, Secretary; Charles S. Gall, Registrar; J. Alex. Browne, M.D., Health Officer; James Fitzpatrick, William McKeon, William H. MacDonald, William H. Lowe, D.V.S., and William S. Greene, M.D., Inspectors.

Perth Amboy, Middlesex county; population, 32,121. Justus Kaletsch, President; P. N. Kennedy, Leo Schwartz, George Wustefeld, Robert W. Macan, Thomas F. Burke, Chas. I. Silk, M.D., Wilbur La Roe, Secretary and Registrar; John L. Lund, M.D., Samuel T. Frost and John H. Kerr, Inspectors.

Plainfield, Union county; population, 20,550. William H. Murray, M.D., President; Fred W. Dunn, Arthur E. Force, Thos. S. Davis, M.D., Secretary; H. O. Mattison, Registrar; John O'Brien, Jr., Health Officer; William Addis, Sr., and Carl T. Pomeroy, Inspectors.

Port Republic City, Atlantic county; population, 405. Daniel Fielder, President; William Van Sant, Gersh Fielder, Thomas A. York, John W. Barton, Clerk.

Rahway, Union county; population, 9,337. Joseph G. Smith, President; John T. Brickell, Walter E. Cladek, M.D., Moses Ritter, Edward J. Ghegan, Chas. H. Lambert, Clerk and Registrar; Fred J. Mix, Inspector.

Salem, Salem county; population, 6,614. R. M. A. Davis, M.D., President; L. H. Hummel, M.D., Chas. Markley, Frank Grier, Chas. R. Sharp, Harry Crispin, Warren T. Sparks, Secretary; Frank S. Harris, Registrar and Inspector.

Sea Isle City, Cape May county; population, 551. James F. Eustace, President; Howard G. Stimus, M.D., Thomas Mitchell, John M. Ross, Clerk; A. S. Steelman, Registrar.

Somers Point, Atlantic county; population, 604. William M. Himeback, President; William Thompson, Lewis Mason, T. George Middleton, Clerk and Registrar.

South Amboy, Middlesex county; population, 7,007. E. H. Eulner, M.D., President; Jos. A. Sexton, Thomas C. Gelsinson, Clerk; Wm. Albaugh, Registrar; Wm. H. Parison, Inspector.

Summit, Union county; population, 7,500. Wm. H. Laurence, M.D., President; M. J. Kenny, Parker W. Page, Thomas H. Rockwell, M.D.,

* No report received.

James G. Ovens, J. Edw. Rowe, M.D., Clerk and Registrar; T. J. Scott, Inspector.

*Trenton, Mercer county; population, 96,815. Howard H. Ely, Clerk and Registrar.

Ventnor City, Atlantic county; population, 491. C. Claude Scull, President; Adolph E. Apel, William G. Lore, H. C. TeSt, James G. Scull, Clerk and Registrar; John C. Tull, Inspector, Atlantic City.

Woodbury, Gloucester county; population, 4,642. Wm. T. Cooper, President; Samuel B. Burkett, H. B. Diverty, M.D., Wm. H. Duffield, Wm. A. Fisher, Adon W. Cattell, Theo. S. Burrows, Secretary; Arthur Starr, Registrar; Joshua Dawson and T. D. Clark, Inspectors.

BOROUGHES.

Allendale, Bergen county; population, 937. W. E. Carver, President; J. M. Hamilton, J. A. Hubbard, M. J. Couch, A. B. Smith, Clerk.

Allenhurst, Monmouth county; population, 306. T. C. Cottrell, President; Geo. D. Morrow, Ira E. Whyte, H. W. Danty, Thos. L. King, G. B. Cade, Clerk and Registrar; E. H. Havens, Inspector.

*Allentown, Monmouth county; population, 634. H. H. Anderson, M.D., Secretary.

Alpine, Bergen county; population, 377. Wm. S. Opydke, President; Douglass Green, Closter; J. H. Conklin, Sylvanus Van Valen, L. H. Tavernier, Clerk and Registrar.

*Andover, Sussex county; population, 884. H. E. Wilson, Clerk.

Atlantic Highlands, Monmouth county; population, 1,645. B. E. Falling, M.D., President; Lewis B. Morris, Joseph Trunen, Frank W. Reiter, Jas. S. Mason, W. T. Franklin, Clerk and Registrar; John R. Snediker, Inspector.

Audubon, Camden county; population, 1,343. Wm. Yardley, President; Robert Morrell, Jos. Williams, Harry Mackintosh, Howard Cullingham, Clerk and Registrar; Frederick Weichard, Inspector.

Avalon, Cape May county; population, 230. E. O. Howell, Jr., Registrar.

Avon, Monmouth county; population, 426. Frank A. Sofield, President; John A. Smith, Dow Kling, John Supplee, Clerk and Registrar; H. E. Stanton, Inspector.

*Barnegat City, Ocean county; population, 70. J. C. Woodmansee, Clerk.

Bay Head, Ocean county; population, 281. Julius Foster, Assessor.

*Beach Haven, Ocean county; population, 372. Thomas A. Gavin, Clerk.

Belmar, Monmouth county; population, 1,433. Wallace G. Hopper, President; William M. Bergen, Isband Dunfee, Dr. Fredk. Griffith, Wilmer H. Hoffman, Jacob Rosenfeld, Chas. O. Hudnut, Clerk and Registrar; Alfred J. Wildman, Inspector.

Bergenfields, Bergen county; population, 1,991. Levi L. Holmes, President; W. Banta Van Saun, Mervyn Pratt, Dr. Geo. P. Pitkin, John J. Huyler, Registrar.

Bloomsbury, Hunterdon county; population, 600. Theo. Melick, President; Geo. Hawk, E. L. Reigel, J. V. Willever, W. A. Rutt, Clerk and Registrar; Dr. J. M. Betts, Inspector.

* No report received.

Bogota, Bergen county; population, 1,125. Frank R. Wesley, President; John McNaughton, Russel B. Lord, E. H. Stedman, F. J. Pavlis, John F. Hill, Clerk and Registrar; M. G. Thewut, Health Officer; Robert Ballagh, Plumbing Inspector, Hackensack.

Bound Brook, Somerset county; population, 3,970. J. T. Robinson, M.D., President; C. R. P. Fisher, M.D., George Stryker, W. S. Negus, Secretary; Charles McNabb, Registrar and Inspector.

Bradley Beach, Monmouth county; population, 1,807. W. W. Danin, President; Wm. Haussler, Leroy Johnson, Chas. F. Burney, Clerk and Registrar; Geo. W. Bostick, Inspector.

Branchville, Sussex county; population, 663. Edward A. Ayer, M.D., President; Jacob C. Price, William C. Cook, John D. Compton, Wilbur F. Dye, Ernest A. Shay, Clerk and Registrar.

*Brigantine City, Atlantic county; population, 67. E. R. Smith, Registrar.

Butler, Morris county; population, 2,265. G. C. Coates, President; E. P. Smithyman, Rudolph Guenter, Samuel K. Owen, Clerk; Allan Looker, Registrar, Bloomingdale.

Caldwell, Essex county; population, 2,236. Wm. H. Van Wart, President; Wm. J. Gray, Ottmar Block, Dr. Edwin E. Bond, Isaac E. Baldwin, Clerk; John J. Van Order, Registrar; C. H. Wells, Inspector, Montclair.

Cape May Point, Cape May county; population, 162. Amnon Wright, President; Charles Markley, T. Hazzard, Albert Schellinger, Frank R. Bowne, Clerk and Registrar; V. M. D. Marcy, M.D., Inspector, Cape May City.

Carlstadt, Bergen county; population, 3,807. Louis Cuneo, President; H. A. Schmidt, Chas. Lonz, Rudolph Rayner, Clerk and Registrar; Henry Link, Inspector.

Chatham, Morris county; population, 1,874. Joseph E. Pollard, M.D., President; Walter A. Jaquith, M.D., Walter V. Sayre, Rufus Keisler, Jr., David H. Crawford, Clerk and Registrar; John J. McCormack, Inspector.

Chesilhurst, Camden county; population, 246. James Brearey, President; John G. H. Horton, Louis S. B. Weigand, H. B. E. Deaton, J. T. Humphries, Clerk and Registrar.

*Clayton, Gloucester county; population, 1,926. C. F. Fislser, M.D., Registrar.

*Cliffside Park, Bergen county; population, 3,394. O. R. McElwain, Clerk and Registrar, Cliffside.

*Clinton, Hunterdon county; population, 836. Geo. A. Hall, Clerk. Closter, Bergen county; population, 1,483. David Parselis, President; David Wark, D. P. Doremus, F. D. Eckerson, Alfred Anderson, Clerk and Registrar.

Collingswood, Camden county; population, 4,795. H. L. Bialy, President; Henry Bennett, Henry Bauer, C. W. Batchelor, A. A. Gribbon, Chas. Kloss, Jr., C. C. Powell, Clerk and Registrar; Edward S. Sheldon, M.D., Edw. B. Rogers, Chas. F. Shaw and E. S. Simpson, Inspectors.

Cresskill, Bergen county; population, 550. Cornelius A. Lewis, President; Paul O. E. Ruhl, Phillip F. Nestel, John Ferdon, Clerk; George Y. Allaire, Registrar; Dr. J. B. W. Lansing, Inspector, Tenafly.

*Deal, Monmouth county; population, 273. Frederick C. Weber, Clerk.

* No report received.

Delford, Bergen county; population, 1,005. R. W. Cooper, President, New Milford; W. E. Williams, J. J. Van Wagoner, J. S. Voorhis, Clerk and Registrar; S. A. Vandewater, M.D., Inspector, all of Oradell.

***Demarest, Bergen county;** population, 560. A. Machold, Clerk.

Dumont, Bergen county; population, 1,783. R. D. Van Buskirk, President; Dr. Geo. S. Clark, F. Kleppe, Frank Hill, Clerk and Registrar; Dr. J. E. Pratt, Inspector.

Dunellen, Middlesex county; population, 1,990. Edward Pennock, President; Thomas H. Platt, Louis Churchill, Dr. Thomas J. Hogan, Clerk; Wesley C. Blain, Inspector.

East Newark, Hudson county; population, 3,163. John Pringle, M.D., President; Joseph North, Wm. B. McGlennon, M.D., E. J. McKenna, Clerk; F. H. Palardy, Registrar; John Keenan, Inspector.

East Rutherford, Bergen county; population, 4,275. George Sanders, President; Oscar Fortenbach, W. E. Ogden, M.D., William T. Seeger, Martin Messman, Ella M. Niederer, Registrar; C. V. Carly, Inspector.

Edgewater, Bergen county; population, 2,655. George W. Allison, President; Edward M. Fitzgerald, John E. Mulligan, Thomas W. Bradley, Arthur J. Carleton, Clerk and Registrar.

Elmer, Salem county; population, 1,167. Isaac B. Reeve, President; J. V. Conover, M. S. Black, E. E. Hires, Chas. H. Morris, P. M. Fox, Clerk and Registrar.

Emerson, Bergen county; population, 767. Diedrich Wulff, President; Rocco Alexander, Malcolm H. Angell, F. Adolph Maul, Harry I. Angell, Clerk and Registrar.

Englewood Cliffs, Bergen county; population, 410. Wm. Wunsch, President; Arnold M. Probst, August Herrmann, Daniel Westervelt, Emil Vyborny, Registrar, Coytesville; Jos. Huger, M.D., Inspector, Fort Lee.

Englishtown, Monmouth county; population, 468. Frank C. Laird, President; Frank Lewis, Charles P. English, Samuel S. Johnson, Elmer E. Christie, Clerk and Registrar.

Essex Fells, Essex county; population, 442. Chas. E. Leach, President; W. Foster, Oakes; James C. Spriggs, Daniel M. Wootton, Clerk and Registrar.

Fairview, Bergen county; population, 2,441. Geo. Ellenbeck, President, Cliffside; W. G. Wingerath, Fairview; Wm. Laufer, Hudson Heights; O. O'Conner, Cliffside; John S. Tracy, Clerk, Registrar and Inspector, Fairview.

Fanwood, Union county; population, 471. F. W. Westcott, M.D., President; A. D. Beeken, C. R. Vincent, Philip Nieder, S. W. McAneny, Secretary and Registrar.

Farmingdale, Monmouth county; population, 416. A. A. Yard, President; Harry Hulshart, Ira Bound, J. Walter Butcher, Clerk.

Fieldsboro, Burlington county; population, 480. Robert Bignall, President; Reuben Parker, Walter Griffith, Joseph Hesley, W. H. Errickson, Clerk; Geo. W. Carman, Registrar.

***Flemington, Hunterdon county;** population, 2,693. John H. Shrope, Secretary.

Florham Park, Morris county; population, 558. Charles H. Genung, President, Madison; Herbert V. B. Smith, Florham Park; Frank Budd,

*No report received.

Chatham; Larue Ten Eick, Madison; Wm. V. Tunis, Clerk and Registrar, Madison; Geo. E. Felch, Inspector, Florham Park.

Folsom, Atlantic county; population, 232. Jacob Blazer, President; Jacob T. Roller, Henry Roller, Jas. Linback, Louis Schulze, Secretary and Registrar.

***Fort Lee, Bergen county;** population, 4,472. John N. Race, Clerk.

Frenchtown, Hunterdon county; population, 984. E. J. Stryker, President; Wm. S. Dalrymple, Walter Stahlen, Martin T. Bellis, John H. Kline, Secretary; Preston S. Bloom, Registrar.

Garfield, Bergen county; population, 10,213. Miles C. Whitehead, President; Ernest B. Dahmert, Max Walter, George Maitland, Louis H. Heinzman, Clerk and Registrar; Oepke Bonnema and Martin D. Kart, Inspectors.

Garwood, Union county; population, 1,118. Adam H. Miller, President; J. M. Cowell, Chas. Schoenwisner, W. T. Mead, Burton M. Galoway, Clerk, Registrar and Inspector; William Addis, Inspector, Plainfield.

Glen Ridge, Essex county; population, 3,260. H. C. Harris, M.D., President; W. W. Schouler, A. T. Benedict, F. D. Bell, H. K. Benson, Clerk; John A. Brown, Registrar; P. Higgins and H. K. Benson, Inspectors.

Glen Rock, Bergen county; population, 1,055. C. M. Viel, President, Ridgewood; James May, Ridgewood; J. L. Pilkington, Ridgewood; Hubbard Ferguson, Glen Rock; Wm. G. Griffiths, Clerk, Ridgewood R. F. D. No. 2; James Christopher, Registrar, Ridgewood; C. W. Harreys, M.D., Inspector, Ridgewood.

Haddonfield, Camden county; population, 4,142. Stanley Rurk, President; Alfred J. Shuster, Herbert D. Shivers, William W. Hodgson, Wm. H. Harrison, Clerk and Registrar; Edw. F. Magill, Inspector.

Haddon Heights, Camden county; population, 1,452. Geo. W. Waters, M.D., President; Edw. L. Jenks, John B. Reeves, W. M. Pollock, Secretary; E. N. C. Davis, Registrar; Edw. L. Jenks, Inspector.

Haledon, Passaic county; population, 2,560. Fred Wenzel, Sr., President; Ernest Schroeder, John J. Kapp, Jr., Theo. B. Kegelmann, Clerk and Registrar; A. A. Lydecker, M.D., Inspector.

Hampton, Hunterdon county; population, 914. W. Frank Fritts, President; James Splane, Robert C. Thompson, Thomas J. Raber, Clerk and Registrar; T. B. Fulper, M.D., Inspector.

***Harrington Park, Bergen county;** population, 377. Aubrey Ruggles, Clerk and Registrar.

***Harvey Cedars, Ocean county;** population, 33. J. L. Fenimore, Registrar.

Hasbrouck Heights, Bergen county; population, 2,155. Howard B. Vannok, President; E. L. Tenney, Carlton T. Beck, Wm. J. Schweickert, Clerk and Registrar; S. V. Morris, M.D., Health Officer; D. M. Davidson, Plumbing Inspector.

Haworth, Bergen county; population, 588. George A. Hurd, President; M. Dieck, E. T. Hendrickson, A. Martinot, H. F. Copeland, Clerk and Registrar.

Hawthorne, Passaic county; population, 3,400. Paul A. Wieland, President, Hawthorne; J. Munnenthaler, Hawthorne; J. Rolla, Pateron, W. E. Thompson, Hawthorne; H. V. Teetsell, Clerk, North Pater-

*No report received.

son; John A. Shea, Registrar, North Paterson; Joseph Payne, M.D., Midland Park, and Richard Keefe, Hawthorne, Inspectors.

Helmetta, Middlesex county; population, 661. James Dening, President; John Hysore, Clinton Clemons, Andrew York, Robt. J. Franklin, Clerk; E. M. Clemons, Registrar; J. C. Shinn, M.D., Inspector, Jamesburg.

High Bridge, Hunterdon county; population, 1,545. P. H. Murray, President and Registrar; F. C. Low, M.D., Samuel Tait, J. L. Phillips, Clerk; W. C. Alpaugh, M.D., Inspector.

*Highland Park, Middlesex county; population, 1,517. Wm. H. Holman, Clerk and Registrar.

*Highlands, Monmouth county; population, 1,386. Calvin Parker, Clerk and Registrar.

Hightstown, Mercer county; population, 1,879. William F. Lott, President; C. M. Franklin, M.D., D. H. Cunningham, A. V. Dawes, R. R. Forman, A. V. Pierson, Clerk and Inspector; F. V. Jemison, Registrar.

*Hohokus, Bergen county; population, 488. John De Vore, Secretary.

*Holly Beach, Cape May county; population, 1,901. E. Yenney, Clerk.

*Hopatcong, Sussex county; population, 146. Theo. A. K. Gessler, Clerk and Registrar, Landing.

Hopewell, Mercer county; population, 1,073. Robt. P. Miller, M.D., President; Jos. B. Hill, Wm. H. Hart, J. H. Merz, Dr. Robert Zulauf, Clerk and Registrar.

Island Heights, Ocean county; population, 313. H. H. Davis, President; A. W. Atkinson, Robt. T. Patterson, James Forester, H. C. Lippincott, W. B. McKaig, Clerk and Registrar.

Jamesburg, Middlesex county; population, 2,075. Geo. A. Shultz, President; James B. Pownall, Paul S. Davison, Wm. A. Thompson, Wm. S. Hankins, Clerk; Wm. H. Brooks, Registrar; John L. Suydam, M.D., Inspector.

Kenilworth, Union county; population, 779. F. S. Roosa, President; C. C. Wilber, E. F. Stevens, C. R. Losey, Clerk.

*Lavalette, Ocean county; population, 42. William R. Taylor, President and Secretary.

*Leonia, Bergen county; population, 1,486. H. M. Thompson, Clerk and Registrar.

Linden, Union county; population, 610. H. B. Hardenburg, President; Wm. McDonagh, Philetus Smith, H. L. Browning, Jr., J. L. Neubauer, J. F. Watson, W. M. Watson, Clarence H. Smith, Clerk and Registrar.

*Linwood, Atlantic county; population, 602. James Farish, Secretary and Registrar.

*Little Ferry, Bergen county; population, 2,541. Louis Brauer, Clerk and Registrar.

Lodi, Bergen county; population, 4,138. Ernest L. Rumsey, President; Peter De Vries, John W. Lane, August R. Hunter, Jacob Van Hook, Clerk and Registrar; Henry H. Brevoort, M.D., and Tunis Loooy, Inspectors.

Longport, Atlantic county; population, 113. William S. Gilmore, President; H. D. Hamilton, Berwyn, Pa.; Wilton D. Jackson, Bolton E. Steelman, E. Fullerton Cook, Clerk and Registrar; William C. Gilmore, Registrar.

Madison, Morris county; population, 4,658. Warren H. Barton, Presi-

dent; E. P. Holden, F. H. Seward, M.D., J. J. C. Humbert, J. H. McGraw, S. Fred Burnet, Registrar and Inspector.

Manasquan, Monmouth county; population, 1,582. Wm. A. Thorpe, President; William A. Morton, Alonzo Mount, Robert M. Marks, Registrar; Richard B. Campbell, Inspector.

*Matawan, Monmouth county; population, 1,646. Wm. Rodgers, Clerk, Registrar and Inspector.

Maywood, Bergen county; population, 839. Henry Heck, President; G. Berroyer, J. M. Masters, J. W. Larbig, J. W. Norton, Robert Saunders, G. M. Fetzer, Clerk and Registrar.

Mendham, Morris county; population, 1,129. G. S. De Groot, M.D., President; D. Sage, Bernardsville, E. Garabrant, G. Silas Thompson, Edson J. Rood, Clerk.

Merchantville, Camden county; population, 1,996. Jos. E. Vankirk, President; A. H. Moses, J. V. Garrison, Thos. Hill, Jos. Lawrence, M.D., W. B. Stewart, Clerk and Registrar; Wm. Lindeman, Inspector.

Metuchen, Middlesex county; population, 2,138. A. C. Kelly, President; C. P. Hulb, F. M. Orton; H. Gross, M.D., Clerk; R. B. Crowell, Registrar.

Midland Park, Bergen county; population, 2,001. C. P. Morgan, President; Charles R. Mastin, August H. Wostbrock, H. R. Snyder, Theodore Mabie, Wortendyke; Henry Amos, Wm. J. Ryans, Clerk and Registrar, Wortendyke; Joseph Payne, M.D., Inspector.

Milford, Hunterdon county; population, ———. Wm. R. Saller, President; James Holden, John Giles, Frank P. Vanderbilt, Clerk and Registrar; A. A. Hiel, M.D., Inspector.

Millstone, Somerset county; population, 157. S. O. B. Taylor, M.D., President and Inspector; James H. Hagaman, William C. Kitchen, William P. Bainbridge, William H. Polhemus, Clerk; E. M. Davis, Registrar.

Milltown, Middlesex county; population, 1,584. Wm. Kuhithan, President; John Dow, Adam Wagner, Walter Reeve, Robert Paterson, Milton Brindle, Clerk; Robert Harkins, Registrar; N. Nes. Forney, M.D., Inspector.

*Monmouth Beach, Monmouth county; population, 485. Nicholas Wolley, Secretary.

Montvale, Bergen county; population, 522. J. E. Thier, President; Rudolph Ludwig, D. S. Atkins, G. L. Ansel, Pearl River; John B. Hering, Clerk and Registrar.

*Moonachie, Bergen county; population, 638. S. T. Saviello, Registrar, Wood Ridge.

Mountainside, Union county; population, 362. Thomas Kitts, President; Alfred E. Pearsall, Aaron T. Hagaman, Robert Laing, Registrar; August Schwartz, Inspector.

Mount Arlington, Morris county; population, 277. R. J. Chaplin, President; F. H. Tappan, P. S. Dyer, C. D. Gordon, M.D., James Levie, Clerk and Inspector.

*Mount Tabor, Morris county; population, ———. H. A. Chamberlain, Clerk, 24 Garden avenue, Jersey City.

National Park, Gloucester county; population, 325. P. B. Milligan, President; O. H. Duer, J. L. Williams, Sr., Ruth Clements, Wm. E. Beers, Clerk and Registrar.

Neptune City, Monmouth county; population, 488. George M. Hurley,

* No report received.

* No report received.

President, Avon; E. M. Bentell, Avon; John Palmer, Avon; Perry Denison, Bradley Beach; Sharon F. Smith, Clerk and Registrar, Bradley Beach; William S. Bennett, Inspector, Avon.

*Netcong, Morris county; population, 1,532. Fredk. E. Force, Secretary.

New Providence, Union county; population, 873. C. Reuben Youngs, President, West Summit; Edward T. Nelson, Frederick Wirsching, William Woodruff, Clerk and Registrar.

North Arlington, Bergen county; population, 437. Ed O'Hara, Jr., President; William Stockhoff, George Fleming, Albert Benard, John Beaver, John Devine, Clerk and Registrar; Frederick Reipe, Inspector.

North Caldwell, Essex county; population, 595. William Kusmaul, President; Ralph C. Bach, Carl L. Fischer, William Little, Sherman Paddock, Clerk; Fred L. Baldwin, Registrar, all of Caldwell.

North Haledon, Passaic county; population, 749. William Clowes, President; Wm. J. Ellis, Chas. E. Ellis, Edw. Watson, Joseph Graham, Thomas F. Lord, Emil Miller, Samuel Clowes, Clerk and Registrar, all of Paterson, R. F. D. No. 3; A. A. Lydecker, M.D., Inspector, Haledon.

North Plainfield, Somerset county; population, 6,117. J. O. Osgood, President; A. E. Kenny, A. E. Giddis, C. H. Rugg, A. H. Dundon, Secretary and Registrar; J. L. Oliff, Inspector.

*North Wildwood, Cape May county; population, 833. Chas. G. Glenn, Secretary, Ottens, P. O.

Norwood, Bergen county; population, 564. Albert Mumberg, President; William Harra, Frederick Hafforn, John Gates, Jr., Clerk and Registrar.

*Oakland, Bergen county; population, 568. Allen S. Page, Secretary. Oaklyn, Camden county; population, 653. J. Franklin Johnson, President, Camden; William C. Luick, Emil C. Hessert, Francis Ashdale, George Bossler, Richard D. Early, Clerk and Registrar.

Ocean Grove, Monmouth county; population, —. A. E. Ballard, President; Henry Wheeler, W. H. Wardell, E. N. Cole, H. B. Alday, M.D., Secretary; J. H. Alday, M.D., Inspector.

Old Tappan, Bergen county; population, 305. J. Z. Bogert, President; J. J. O'Connor, W. Blauvelt, C. V. Gifford, Charles De Wolf, Clerk and Registrar, all of Westwood.

Palisades Park, Bergen county; population, 1,411. Samuel Bryant, President; J. S. Van Dyke, M.D., Rollo Steenland, Louis Quad, William Sehner, Walter G. Stevens, Clerk and Registrar.

Park Ridge, Bergen county; population, 1,401. D. W. Woodley, President and Inspector; J. A. Moenig, M.D., S. Alexander, M.D., Martin Verbyst, H. Strohsahl, T. G. Forbes, Clerk and Registrar.

Paulsboro, Gloucester county; population, 2,121. William Gainer, President; William Hancock, George K. C. West, R. H. Reeves, M.D., Jacob Ballinger, Clerk and Registrar.

Pemberton, Burlington county; population, 797. Anthony J. Morris, President; J. G. Montgomery, John B. Nutt, Jos. O. Jones, J. Newton Clevenger, J. J. Brander, Clerk and Registrar.

Pennington, Mercer county; population, 722. Edgar Hart, M.D., President; William Trudel, George W. Snook, Frank A. Blackwell, Charles M. Titus, Clerk; Frank A. Blackwell, Inspector.

*Pennsgrove, Salem county; population, 2,118. C. P. Lummis, M.D., Secretary.

* No report received.

Pitman, Gloucester county; population, 1,950. C. B. Phillips, M.D., President and Registrar; David Shock, M. F. Lummis, M.D., Allen Clark, Robt. F. Moore, Benj. F. Mattson, Inspector.

Pleasantville, Atlantic county; population, 4,390. H. C. Thomas, President; Chas. Shewell, Frank Reinier, Wilbur Reed, John Stephenson, Thomas F. Crawford, Clerk and Registrar; H. L. Harley, M.D., Inspector.

Point Pleasant Beach, Ocean county; population, 1,003. Chas. W. Dampman, President; Chas. B. Imlay, Joseph Elberson, J. Edw. Harvey, H. C. Shoemaker, Jr., Clerk, Registrar and Inspector.

Pompton Lakes, Passaic county; population, 1,060. Lynn S. Abbott, President; Chas. W. Lindsley, Chas. C. Wickstead, John E. Schuyler, Geo. V. Sheffield, Horace L. Wells, Clerk and Registrar; Geo. B. Gale, M.D., Inspector, Butler.

Princeton, Mercer county; population, 5,136. Elmer H. Loomis, President; A. A. Woodhull, Richard Rowland, W. S. McLaren, J. S. Hoff, Bayard Stockton, Jr., Paul Martin, V. D. Bayles, W. B. Howe, Clerk and Registrar; R. Hoyt, Inspector.

Prospect Park, Passaic county; population, 2,719. George Boer, President; Alfred McAuley, Henry Woudenberg, John Crawford, Lambertus Touw, Clerk and Registrar; A. A. Lydecker, M.D., Inspector, Haledon.

Ramsey, Bergen county; population, 1,667. Orval O. Clark, President; John F. De Baun, Otto G. Feist, William J. Boyce, Daniel S. Wanamaker, Clerk and Registrar; Raymond A. Kiefer, M.D., Inspector.

Red Bank, Monmouth county; population, 7,398. James McCaffrey, President; Nicholas J. Wilson, William P. Frey, Biddle H. Garrison, M.D., Howard S. Higginson, Clerk and Registrar; Elwood Minugh, Inspector.

Ridgefield, Bergen county; population, 966. J. J. Conors, President; W. Proctor, W. L. Watson, Grantwood; R. K. Dyas, Clerk and Registrar; John Banta, Inspector.

*Riverside, Bergen county; population, 736. James E. Sims, Clerk. Riverton, Burlington county; population, 1,788. E. C. Stoughton, President; C. A. Wright, James Cunningham, S. H. Davis, Charles Street Mills, M.D., Clerk and Inspector; Charles Davis, Inspector.

Rockaway, Morris county; population, 1,902. Harry W. Mutchler, President; Leonard Hoffman, J. M. Nichols, Clarence Beach, J. Frank Robinson, T. Brook Davey, Edward Roegner, Wm. A. Parلمان, Clerk and Registrar; Charles Hull, Inspector.

Rocky Hill, Somerset county; population, 502. Wm. H. Stults, President; M. Reeve, M.D., A. E. Haynes, C. R. Baldwin, Clerk and Registrar.

*Roosevelt, Middlesex county; population, 5,786. R. Joseph Murphy, Clerk.

*Roseland, Essex county; population, 436. Everett Booth, Registrar. Roselle, Union county; population, 2,725. John I. Howe, President; A. A. Pope, C. P. Higgins, H. C. Pierson, M.D., G. W. Strickland, M.D., E. S. Waller, J. D. Cooper, Secretary and Registrar; Wm. Morris, Inspector, Roselle Park.

Roselle Park, Union county; population, 3,138. Alfred Atkins, President; Edward J. Kline, Henry Bangert, George Dennick, John E. Dower, Clerk and Registrar; William Morris, Inspector.

* No report received.

***Rumson, Monmouth county;** population, 1,449. Wm. Pearsall, Clerk. **Rutherford, Bergen county;** population, 7,045. Chas. Calhoun, M.D., President; Chas. R. Hunt, F. W. Fleming, George Schermerhorn, E. J. Kennedy, F. M. Buckles, Secretary and Registrar; Geo. K. Thomas, Inspector.

Saddle River, Bergen county; population, 483. Robert T. Wilson, President; R. A. Adams, J. W. Woodruff, J. G. Ackerman, James L. Ackerman, Clerk and Registrar; A. Van Nostrand, Inspector, Westwood.

Seabright, Monmouth county; population, 1,220. Howard B. Reed, M.D., President; S. S. Megill, John E. Howland, Clerk and Registrar; C. M. Slayton, Inspector.

Seaside Park, Ocean county; population, 101. Dr. Charles Harker, President; Charles B. Coles, L. J. Stone, G. H. Thacher, Clerk and Registrar.

Secaucus, Hudson county; population, 4,740. Louis G. Asmussen, President; George Fox, Andrew Hornung, Frank Kroll, Frank E. Van Dyne, Clerk.

Somerville, Somerset county; population, 5,060. Aaron L. Stillwell, M.D., President; William V. Steele, John Osbourn, Thomas H. Flynn, M.D., William R. Sutphen, Clerk and Registrar; George D. Totten, Inspector.

South Bound Brook, Somerset county; population, 1,024. E. B. Randolph, President; J. T. Robinson, M.D., E. D. Latourette, Wm. T. Morecraft, James P. Hoffman, Clerk and Registrar.

***South Cape May, Cape May county;** population, 7. James Ritchie, Mayor.

South River, Middlesex county; population, 4,772. P. W. Radcliffe, President; A. W. Bissett, Charles Anderson, Jesse Selover, Clerk and Inspector; J. Conover Bowne, Registrar.

Spotswood, Middlesex county; population, 623. Joseph Hodapp, President; Charles Campbell, James H. Beebe, Clerk; Geo. W. De Voe, Registrar.

Spring Lake, Monmouth county; population, 853. S. R. Knight, M.D., President; J. G. Newman, Edward White, D. H. Hills, Clerk and Registrar; E. W. Remsen, Inspector.

***Stanhope, Sussex county;** population, 1,031. J. J. Shaw, Clerk and Inspector.

Stockton, Hunterdon county; population, 605. Peter A. Shepherd, President; Charles A. Smith, Godfrey C. Stout, John S. Wilson, Clerk; Philip E. Rockafellow, Registrar and Inspector.

***Surf City, Ocean county;** population, 40.

Sussex, Sussex county; population, 1,212. Harvey D. Van Gaasbeek, M.D., President; S. F. Quince, John L. McCoy, M.D., Harry E. Wells, Clerk and Registrar; Moses Green, Inspector.

***Swedesboro, Gloucester county;** population, 1,477. W. H. Rieger, Clerk and Registrar.

***Tenafly, Bergen county;** population, 2,756. J. M. MacKellar, M.D., Clerk.

Totowa, Passaic county; population, 1,130. John Raupp, President; Joseph Boyle, Eugene Luttringer, Peter Touw, Jr., Frank Atkins, Clerk and Registrar; Charles Keating, M.D., Inspector.

***Tuckerton, Ocean county;** population, 1,268. J. F. Mathis, Secretary.

* No report received.

***Upper Saddle River, Bergen county;** population, 273. Henry Zabriskie, Clerk and Registrar, Allendale, R. F. D.

Verona, Essex county; population, 1,675. W. Pitt Rich, President; W. A. Schneider, Judson Parker, John H. Allen, Louis C. Miller, Clerk; Chas. S. Simonson, Registrar; Chester H. Wells, Health Officer, Montclair.

Vineland, Cumberland county; population, 5,282. Ferdinand Koltz, President; J. C. Barretta, Busley Ayres, Winfield Walls, Geo. W. Lamb, Clerk and Registrar; J. H. Winslow, Health Officer; W. H. Blake, Sanitary Inspector; W. J. Large, Plumbing Inspector.

Wallington, Bergen county; population, 3,418. John Van Iderstine, President; Joseph Brett, Edward Taylor, Fred Corey, James Brennan, Secretary and Registrar.

Washington, Warren county; population, 3,567. F. P. McKinstry, M.D., President; Chas. M. Williams, M.D., F. J. La Rieu, M.D., D. V. Wyckoff, J. Martin Kase, Wesley Fleming, A. J. Craft, Clerk and Registrar; Geo. C. Losey, Inspector.

Wenonah, Gloucester county; population, 645. William C. Cattell, President; John Colbert, George L. Dilks, Hamilton Turner, Jesse W. English, Clerk and Registrar; Joseph S. Chew and Harry A. Stout, M.D., Inspectors.

West Caldwell, Essex county; population, 494. G. M. Caufield, President; M. S. Crane, Joseph Beach, F. A. Baldwin, Theodore M. Gray, Clerk; Herbert Francisco, Registrar, all of Caldwell.

West Cape May, Cape May county; population, 844. William H. Smith, President; Jacob Smallwood, Danl. E. Stevens, H. H. Eldredge, F. R. Hughes, M.D., Clerk; Theo. W. Reeves, Registrar.

***West Long Branch, Monmouth county;** population, 879. R. R. Hughes, Clerk.

Westwood, Bergen county; population, 1,870. George J. Scott, President; Philip Myer, Winfield S. Post, William H. Hengstenburg, Geo. M. Levitas, M.D., Nicholas Cleveland, Clerk and Registrar.

***Wharton, Morris county;** population, 2,983. Fred Rogers, Clerk.

Wildwood, Cape May county; population, 898. Otto C. Koenke, President; Frank Dorrell, Henry Coombs, Clerk and Registrar; Harry Hendee and H. H. Tomlin, M.D., Inspectors.

Wildwood Crest, Cape May county; population, 103. Richard Scampton, President; Wm. A. Justice, Leslie Hallen, Clerk; E. B. Fagan, Registrar; Thos. Cross, Inspector.

Woodbine, Cape May county; population, 2,399. N. Lipshus, President; R. Reiner, J. Goodman, P. Horenstein, B. Tchernishevsky, S. H. Goldberg, Clerk and Registrar; R. Zellemyer, Inspector.

***Woodcliff, Bergen county;** population, 470. G. J. Wortendyke, Clerk and Registrar, Allendale, R. F. D. No. 2.

Woodlyne, Camden county; population, 500. E. M. Deckman, President; C. N. Davis, C. P. Gordon, Christian Dupont, Clerk and Registrar; J. M. Albert, Inspector.

Woodbridge, Bergen county; population, 1,043. Ernest Schuetter, President; Seymour E. Aimes, Julius Doerflinger, Isaac Holmes, Joseph F. Beck, Clerk and Registrar.

Woodstown, Salem county; population, 1,613. Isaac B. Coles, President; H. V. Foster, R. E. Corson, Wm. Coleman, E. P. McGeorge, M.D., Wm. B. Foster, Clerk and Registrar; F. P. Vanlier, Inspector.

* No report received.

TOWNS.

Belyidere, Warren county; population, 1,764. Dr. Frank P. Lefferts, President; George Widenor, Jr., William Widenor, Samuel J. Hixson, George H. Weaver, Clerk and Inspector.

Bloomfield, Essex county; population, 15,070. James J. Thompson, President; Joseph Charles, Jacob Wolfe, M.D., Wm. Ritscher, Seymour P. Gilbert, Dr. Joseph C. Salle, Clerk, Registrar and Inspector.

Boonton, Morris county; population, 4,930. Thomas Heaton, President; John Glennon, Giles Miller, Frank N. Banta, Clerk and Registrar; J. Herbert Dawson, Inspector.

Dover, Morris county; population, 7,468. Arthur P. Van Gelder, President; William G. Hummel, A. W. Condict, M.D., A. J. Carroll, M.D., William H. Tonking, Clerk and Registrar; John G. Taylor, Inspector.

Freehold, Monmouth county; population, 3,233. E. D. Clayton, President; W. A. Barkalow, H. S. Brown, M.D., S. L. Bennett, Charles V. Du Bois, Alonzo White, Alonzo Brower, Clerk, Registrar and Inspector.

Guttenberg, Hudson county; population, 5,647. Phillip Martin, President; Max Rosivatch, John Sullivan, Frederick Buesser, Joseph A. Hurley, August G. Brunckhorst, W. G. Langenhop, Clerk.

*Hackensack, Bergen county; population, 14,050. Coleman Gray, Secretary.

Hackettstown, Warren county; population, 2,715. George W. Smith, President; James Tamblyn, J. W. Curtis, W. S. McClennan, Thos. Nolan, Jesse Smith, A. G. Boettiger, Clerk and Registrar; R. G. Clark, Inspector.

Hammonton, Atlantic county; population, 5,988. John A. Hoyle, President; John Walther, C. R. Scullen, R. G. Scudder, Jos. S. Mart, Dr. J. C. Bitler, Clerk and Registrar; Dr. Chas. Cunningham, Inspector.

Harrison, Hudson county; population, 14,498. John T. Malone, President; Henry Allers, M.D., Nathaniel Comey, Jos. F. Lynch, Lawrence S. Fagan, Secretary; John T. McClure, Inspector.

Irvington, Essex county; population, 11,877. Jonah Hardgrove, President; Julius Bartosch, Hugo R. Winkler, Benjamin Camp, Westfall Gardner, Edwin Berry, Clerk; Joseph K. Chickenger, Inspector.

Kearny, Hudson county; population, 18,659. Wm. P. Anderson, President; Nevin Kennedy, Chas. Schiller, Frank Odendahl, Geo. McAfee, A. O. Bornemann, Clerk; Robt. V. England, Registrar; James A. Exton, M.D., Health Officer; Albert E. Geissler, Inspector; H. E. Stearns, Veterinarian.

Keypoint, Monmouth county; population, 3,554. Gustave Maurer, President; S. F. Mason, William De Groff, A. S. Van Buskirk, D. Edgar Roberts, M.D., Charles F. Tuthill, Clerk and Registrar; H. W. Hartman, M.D., Inspector.

Montclair, Essex county; population, 21,550. M. N. Baker, President; R. P. Francis, M.D., L. W. Halsey, M.D., Seward Davis, John N. Holton, Secretary; C. H. Wells, Registrar and Inspector.

Morristown, Morris county; population, 12,507. James J. Lyons, President; Clifford Mills, M.D., F. H. Glazebrook, M.D., Robert C. Caskey, John D. Collins, Registrar; Robert S. Van Dyke, Inspector.

*Newton, Sussex county; population, 4,467. A. V. B. Mackerly, Clerk and Registrar.

* No report received.

Nutley, Essex county; population, 6,009. J. L. Miller, President; R. W. Booth, E. P. Whalen, M.D., W. De Vausey, Geo. Hawksworth, Clerk and Registrar; E. E. Farth, Inspector.

Phillipsburg, Warren county; population, 13,903. Joseph Pfeiffer, President; Alma Williston, M.D., P. Frank Hagerty, Frank Coyne, Michael T. Lynch, Daniel Ziegler, Frank Kneedler, Clerk and Registrar; Howard R. Carey, Inspector.

Raritan, Somerset county; population, 3,672. B. F. Seaman, M.D., President; Wm. Wharton, J. J. Bourke, Clerk and Registrar; George A. West, Inspector.

Town of Union, Hudson county; population, 21,023. Chas. F. Ruh, President; Fredk. Zapp, Erwin Seitz, John Weil, Chas. Steller, Emil Maisner, M.D., Richard Specker, Clerk; Grant P. Curtis, M.D., Inspector.

Westfield, Union county; population, 6,420. Joseph B. Harrison, M.D., President; George L. Delatour, Hemer H. Butler, D.V.S., George S. Laird, M.D., C. W. Harden, Clerk and Registrar; Andrew J. Carney, Inspector, North Plainfield.

West Hoboken, Hudson county; population, 35,403. L. A. Menegaux, President; C. C. Hoffmeyer, A. Ludlow, Chas. Weller, A. C. Winant, A. O. Wiesenburg, W. McK. Hillas, Clerk; F. A. Frederick, Sanitary Inspector; W. F. Ziegler, Plumbing Inspector.

West New York, Hudson county; population, 13,560. Charles Orth, President; Joseph Lindner, Harry Kuhlke, Clerk; Rudolph Kunze and Fred Schneider, Inspectors.

West Orange, Essex county; population, 10,980. Chas. Heim, President; Joseph Flemming, Chas. Degmun, Carl E. Stanton, Henry Fendt, Ditlow Schroll, Jr., Clerk and Registrar; James M. Maghee, M.D., Inspector.

VILLAGES.

Ridgefield Park, Bergen county; population, ———. John H. Ficken, President; E. J. Benson, Joseph Fletcher, J. A. Vetter, Otto Khanstrom, Howard B. Ficken, Clerk; Wm. H. Hunter, Registrar; C. A. Knox, M.D., Inspector.

Ridgewood, Bergen county; population, 5,416. Edward S. White, President; Dr. John S. Hanks, Wm. L. Vroom, M.D., C. A. DeMund, M.D., Wm. H. Moore, C. A. Demarest, Clerk; J. Blauvelt Hopper, Registrar; H. H. Pettit, M.D., Health Officer; Dr. John B. Hopper, Inspector, Wyckoff.

South Orange, Essex county; population, 6,014. Mefford Runyon, M.D., President; Richard Freeman, M.D., J. Budd Smith, Edwin S. Allen, Tom C. Watkins, Edward N. Loomis, Secretary; Alfred C. Benedict, M.D., Registrar and Inspector.

TOWNSHIPS.

Acquackanonk, Passaic county; population, 11,869. Richard Berry, President and Registrar, Clifton; George F. Schmidt, Clifton; Eugene F. Piaget, Great Notch; Frank Wilkinson, Clifton; James Marsh, Lake View; Henry Frederick, Delawanna; Edo. M. Yereance, Clerk, Clifton; Jas. F. Sutton, Inspector, Lake View.

Alexandria, Hunterdon county; population, 1,045. William V. Bloom, President, Little York; Joseph Hoff, Everittstown, Walton Martin, Mt. Pleasant; John C. Wilson, Registrar, Everittstown; F. S. Grim, M.D., Inspector, Baptisttown.

Allamuchy, Warren county; population, 642. Jacob D. Roe, President, Allamuchy; John A. Willson, Allamuchy; David M. Vreeland, Great Meadows; Benj. A. Hendershot, Clerk, Allamuchy; George A. Jilson, Registrar, Allamuchy; L. Cook Osmun, Inspector, Hackettstown.

Alloway, Salem county; population, 1,533. Gould S. Hitchner, President and Inspector, Alloway; Joseph Garton, Cohansey; Charles Timberman, Alloway; Dr. W. T. Good, Alloway; William E. Simkins, Clerk and Registrar, Elmer, R. F. D.; Gould S. Hitchner, Inspector, Alloway.

*Andover, Sussex county; population, 521. Wm. Hill, Clerk, Lafayette.

Atlantic, Monmouth county; population, 1,205. Sidney J. Beers, President, Colts Neck; Edward Taylor, Colts Neck; Aaron Sutphin, Phalanx; Frank E. Heyer, Registrar and Inspector, Colts Neck.

*Bass River, Burlington county; population, 685. Jos. B. Lamson, Clerk, New Gretna.

Bedminster, Somerset county; population, 2,375. Charles Tiger, President, Peapack; George E. Crater, Pottersville; Charles Wood, Pottersville; John Bodine, Clerk and Registrar, Gladstone; M. C. Smalley, M.D., Gladstone; C. R. Kay, M.D., Peapack, and J. B. Beekman, M.D., Bedminster, Inspectors.

*Belleville, Essex county; population, 9,891. Edward E. Mathes, Clerk, Belleville.

Berkeley, Ocean county; population, 597. Benjamin F. Butler, President, Bayville; Stout R. Johnson, Toms River; William Britton, Jr., Bayville; Marcus B. Allen, Clerk, Bayville; Devine Butler, Registrar, Bayville; O. A. Wood, M.D., Inspector, Forked River.

Berlin, Camden county; population, 1,611. Samuel Adams, President, West Berlin; Rudolf Kinhue, Berlin; Sessel Tompson, West Berlin; X. F. Ottiger, Clerk, Berlin; F. O. Stern, Inspector, Berlin.

Bernards, Somerset county; population, 4,608. Grant B. Schley, Jr., President, Far Hills; H. R. Kunhardt, Bernardsville; James E. Bathgate, Jr., Basking Ridge; Fred E. Ballentine, Bernardsville; Henry Scheuerman, Basking Ridge; J. E. Buck, Clerk and Registrar, Bernardsville; Josiah Meigh, M.D., Inspector, Bernardsville.

*Bethlehem, Hunterdon county; population, 980. Wm. C. Riddle, Clerk, West Portal.

Beverly, Burlington county; population, 2,337. Harry K. Cramp, President, Beverly; Frank H. Story, Delanco; John E. Thornton, Beverly; H. K. Weiler, M.D., Delanco; Jos. B. Carter, Clerk and Registrar, Delanco.

Blairstown, Warren county; population, 1,718. Isaiah Lance, President, Vail; Theo. Dawes, Blairstown; Emmet Huff, Blairstown; Jos. A. Dugan, Clerk and Registrar, Vail; H. O. Carhart, M.D., Inspector, Blairstown.

Boonton, Morris county; population, 428. Andrew Kincaid, President; Emmons Decker, Frank Bott, Edmund H. Stickle, Clerk and Registrar, all of Boonton.

Bordentown, Burlington county; population, 608. C. D. Mendanhall,

*No report received.

M.D., President; Samuel Johnson, W. W. Dawson, J. H. Polkatt, Dr. Hugh Le Jambre, Clerk and Inspector, all of Bordentown.

*Branchburg, Somerset county; population, 970. Augustus McCullough, Registrar, North Branch Station.

Brick, Ocean county; population, 2,177. Alfred F. Holman, President, W. Point Pleasant; Chas. Johnson, Osbornville; J. H. Le Compt, Herbertsville; John A. Dorsett, Clerk and Registrar, W. Point Pleasant.

Bridgewater, Somerset county; population, 1,742. J. Albert Schneider, President, Martinville; Chas. F. Smith, Raritan; Peter Gulick, Raritan; John Slattery, Clerk and Registrar, Raritan; B. F. Seaman, M.D., Inspector, Raritan.

Buena Vista, Atlantic county; population, 2,723. Alfred Pennock, Sr., President, Registrar and Inspector, Vineland; Harry Brown, Newtonville; Frank Barsuglia, Vineland; Louis F. Canepa, Vineland; Douglas Reed, Clerk, Newfield.

Burlington, Burlington county; population, 1,220. Harry H. Mattson, President; Ellis C. Parker, Fred Shedaker, M. W. Newcomb, M.D., Thos. B. Gandy, Clerk, Registrar and Inspector, all of Burlington.

Byram, Sussex county; population, 1,055. Franklin G. Colby, President, Andover; A. L. Cassidy, Waterloo; Hiram Stone, Andover; Wm. H. McMickle, Clerk, Sparta.

Caldwell, Essex county; population, 704. Henry Myer, President; Austen M. Speer, Edward Sisco, E. E. Peck, M.D., Theodore Vincent, Clerk and Registrar, all of Caldwell.

*Cedar Grove, Essex county; population, 2,409. H. B. Whitehead, M.D., Clerk.

Centre, Camden county; population, 3,200. Herbert K. Dobbs, President, Magnolia; Sewall H. Hodges, Lawnside; Frank M. La Pierre, Magnolia; John H. Jackson, Clerk and Registrar, Magnolia.

Chatham, Morris county; population, 812. Edward W. Elazier, President, Green Village; C. A. Johnson, Chatham; L. A. Noe, Madison; J. Herbert Bebout, Clerk and Registrar, Chatham.

Chester, Burlington county; population, 5,069. William B. Lippincott, President, Moorestown; James H. Huston, Moorestown; Charles H. Dudley, Moorestown; Edward Cutler, Maple Shade; Thos. Gehring, Moorestown; Dr. F. G. Stroud, Secretary and Inspector, Moorestown; Geo. W. Heaton, Registrar, Moorestown.

Chester, Morris county; population, 1,251. John W. Rourk, President; W. S. Howell, Elias Wack, Chas. Rinehart, Clerk and Registrar; Harris Day, Inspector, all of Chester.

Chesterfield Burlington county; population, 1,130. Chas. M. Bunting, President, Crosswicks; Chas. E. Wallace, Chesterfield; Aaron E. Johnson, Crosswicks; Wm. Wallace, Registrar, Crosswicks.

Cinnaminson, Burlington county; population, 1,266. Clayton Conrow, President, Riverton; John L. Schmlerer, Riverton; Benjamin Lippincott, Riverton; George C. Frank, Clerk, Cinnaminson; J. D. Janney, M.D., Inspector, Cinnaminson.

Clark, Union county; population, 469. Henry Sheffelstien, President; Isaac Terhune, Walter Cladek, M.D., Wm. J. Thompson, Clerk, all of R. F. D. Rahway.

Clementon, Camden county; population, 2,794. Jacob C. Lippincott, President, Kirkwood; Fred H. Tomlinson, Laurel Springs; Wm. A.

*No report received.

Wilson, Laurel Springs; Geo. W. Evans, Clerk and Registrar, Lindenwood; Frank B. Cook, Inspector, Laurel Springs.

Clinton, Hunterdon county; population, 2,108. David F. McCathran, President, Annandale; John Godwin, Annandale; John Shurts, Lebanon; Bergen B. Berkaw, Clerk and Registrar, Annandale; H. H. Miller, M.D., Inspector, Lebanon.

Commercial, Cumberland county; population, 2,604. Lewis F. Shropshire, President, Port Norris; C. W. Hand, Port Norris; Claude Bateman, Mauricetown; E. B. Bradford, M.D., Port Norris; Walter C. Riggin, Clerk and Registrar, Port Norris; Jos. N. Fowler, Inspector, Port Norris.

Cranbury, Middlesex county; population, 1,424. Walter Scott, President, Cranbury; John V. B. Wyckoff, Plainsboro; Joseph C. Chamberlain, Cranbury; A. M. Davison, Clerk and Registrar, Cranbury.

Cranford, Union county; population, 3,641. John W. Heins, President; Walter Schober, S. R. Droscher, I. V. S. Hillier, J. Z. Smith, Alfred H. Miller, Clerk; F. R. Swackhamer, Registrar; J. L. Vail, M.D., Inspector, all of Cranford.

*Deerfield, Cumberland county; population, 3,311. H. L. Cooper, M.D., Clerk, Newfield.

Delaware, Camden county; population, 1,706. Wm. Graff, President and Registrar, Haddonfield; J. Watson Matlack, Haddonfield; Jos. Hinchman, Merchantville; Wm. T. Lippincott, Moorestown; W. B. Jennings, M.D., Clerk and Inspector, Haddonfield.

Delaware, Hunterdon county; population, 1,740. J. H. Case, President, Rosemont; Geo. H. Higgins, Sergeantsville; W. R. Stevenson, Stockton; David L. Holcomb, Clerk, Lambertville; Geo. N. Best, M.D., Inspector, Rosemont.

Delran, Burlington county; population, 1,031. Edw. H. Haines, President, Riverside; A. P. Bright, Bridgeboro; Samuel Caldwell, Riverside; George Friday, Clerk and Registrar, Riverside, R. F. D.

*Dennis, Cape May county; population, 1,761. I. S. Townsend, Clerk and Registrar, Clermont.

Deptford, Gloucester county; population, 2,524. John Mayhew, President, Woodbury Heights; Oscar Stern, Almonesson; R. C. Budeman, Westville; Carroll C. Headley, Clerk, Registrar and Inspector, Westville.

Dover, Ocean county; population, 2,452. Lucian Gravatt, President and Registrar; Jacob A. Irons, Anthony A. Dunham, J. C. McClenahan, John A. Ernst, Clerk; Frank Brouwer, M.D., Inspector, all of Toms River.

Downs, Cumberland county; population, 1,519. A. B. Campbell, President, Newport; John Gaskill, Newport; A. P. Hickman, Dividing Creek; Sheppard Campbell, Clerk and Registrar, Newport; G. E. James, M.D., Inspector, Newport.

Eagleswood, Ocean county; population, 550. O. C. Cramer, President, West Creek; Jonathan Cox, West Creek; John A. Shinn, West Creek; Dr. Charles H. Conover, Tuckerton; Philip R. Sprague, Clerk, West Creek.

*Eastampton, Burlington county; population, 508. Chas. F. Holzbaur, Clerk and Registrar, Smithville.

East Amwell, Hunterdon county; population, 1,203. D. S. Lowe, President, Ringoes; Geo. C. Hartpence, Ringoes; Abram Polhemus, Ringoes; John J. Horn, Clerk and Registrar, Hopewell, R. F. D. No. 1; Dr. P. C. Young, Inspector, Ringoes.

* No report received.

*East Brunswick, Middlesex county; population, 1,602. Henry Warnsdorfer, Clerk and Registrar, New Brunswick, R. F. D. No. 3.

East Greenwich, Gloucester county; population, 1,406. William Borden, President, Mickleton; William Cook, Mt. Royal; William Dauson, Mickleton; J. C. Dauson, Clerk, Mickleton.

East Windsor, Mercer county; population, 941. H. R. Applegate, President, Hightstown; Forman Updike, Hightstown; E. R. Pickering, Hightstown; S. L. Mount, Clerk and Registrar, Etra; C. M. Franklin, M.D., Inspector, Hightstown.

Eatontown, Monmouth county; population, 2,076. S. S. Stout, President, Eatontown; F. S. Higginson, Eatontown; H. W. Conrow, Oceanport; D. S. Morris, Clerk, Eatontown; A. L. Cowles, Registrar, Oceanport; Benj. Eldredge, Inspector, Oceanport.

Egg Harbor, Atlantic county; population, 1,110. R. Harry Sheele, President, Idlewood; John H. Smith, Scullville; Somers E. Leeds, Linwood; Wm. Hauenstein, Clerk and Registrar, Pleasantville; Dr. Ernest Zille, Inspector, Scullville.

Elk, Gloucester county; population, 1,022. William Hamilton, President, Aura; Thomas Hann, Ewan; Richard Gant, Monroeville; Samuel L. Seran, Clerk, Aura; E. Mortimer Duffield, Inspector, Glassboro.

Elsinboro, Salem county; population, 419. J. L. Smith, President, Salem; Edward Partell, Salem; Franklin T. Ayares, Clerk, Salem, R. F. D. No. 3; Wm. D. Griscom, Registrar, Elsinboro.

Evesham, Burlington county; population, 1,408. Allen Jones, President, Moorestown; William Dunphey, Marlton; Amos Wills, Marlton; Benj. K. Brick, M.D., Secretary, Marlton; Wm. F. Powell, Registrar, Marlton.

Ewing, Mercer county; population, 1,839. J. L. Knight, President, Trenton Junction; H. M. Fine, Trenton; Wm. S. Morris, Trenton; Wallace Lanning, Clerk and Registrar, Trenton; E. B. Allen, M.D., Inspector, Trenton.

Fairfield, Cumberland county; population, 1,629. James B. Mulford, President and Registrar; Geo. B. Williams, E. W. Trenchard, Jos. M. Myers, H. E. Lore, Chas. H. Nichols, Clerk, all of Fairton.

Fanwood, Union county; population, 1,616. Ira G. Walker, President, Scotch Plains; Henry C. Meyer, Scotch Plains; Winfield S. Terry, Scotch Plains; George H. Johnston, Clerk, Scotch Plains; F. W. Westcott, M.D., Inspector, Fanwood.

Florence, Burlington county; population, 4,731. Louis Gray, President; Chester Emmons, Lambert Rainear, Byron Carty, Secretary and Registrar; David Baird, Jr., M.D., Inspector, all of Florence.

Frankford, Sussex county; population, 1,004. Victor Compton, President, Branchville; H. E. Riddell, M.D., Branchville; Geo. B. Titman, Augusta; F. H. Marlatt, Branchville; J. W. Fountain, Clerk, Branchville, R. F. D. No. 2; Daniel Dalrymple, Registrar, Branchville.

*Franklin, Bergen county; population, 1,954. Daniel Snyder, Clerk and Registrar, Midland Park.

Franklin, Gloucester county; population, 2,603. John L. Downe, President, Newfield; Thomas McArthur, Iona; A. B. Richman, Malaga; Chas. H. Lincoln, Clerk, Registrar and Inspector, Newfield, R. F. D.

Franklin, Hunterdon county; population, 1,099. Burris Snyder, President, Quakertown; John W. Rinehart, Hamden; John W. Snyder, French-

* No report received.

town; Elwood Nixon, Clerk, Quakertown; Q. E. Snyder, M.D., Inspector, Quakertown.

Franklin, Somerset county; population, 2,395. Wm. B. Voorhees, President, Middlebush; Elias Baker, Bound Brook; James G. Cortelyou, Princeton; Cornelius Cadmus, Jr., Clerk and Registrar, Middlebush; J. H. Cooper, M.D., Inspector, East Millstone.

Franklin, Warren county; population, 1,535. Walter Godfrey, President, West Portal; Harvey F. Cole, Broadway; James H. Shipman, Asbury; E. H. Moore, M.D., Asbury; Chas. H. Hoagland, Clerk, Asbury.

Fredon, Sussex county; population, 457. Wm. Roy, President, Newton; Peter E. Garris, Newton; A. C. Snook, Newton; E. W. Landis, M.D., Stillwater; W. N. Westbrook, Registrar, Newton, R. F. D. No. 1.

*Freehold, Monmouth county; population, 2,329. R. V. Lawrence, Clerk and Registrar, Freehold.

Frelinghuysen, Warren county; population, 1,074. Wm. Durling, Jr., President, Johnsonburg; James Toomath, Newton; A. L. Cook, Marksboro; J. E. Bowman, Clerk, Blairstown, R. F. D. No. 1; Fredrick Rorbach, M.D., Inspector, Johnsonburg.

Galloway, Atlantic county; population, 1,976. C. Bodine Somers, President, Oceanville; Cornelius Leeds, Smithville; Harry A. Wickes, Egg Harbor City; Chas. F. Stuckel, Registrar, Egg Harbor City, R. F. D.; C. C. Allen, M.D., Inspector, Absecon.

Glassboro, Gloucester county; population, 2,821. L. N. Shreve, President; Josiah Shute, Geo. Keebler, J. R. Helm, Clerk and Registrar, all of Glassboro.

Gloucester, Camden county; population, 2,330. Chas. M. Fell, President, Laurel Springs; Clarence Blackwood, Sicklerville; James T. Zane, Blackwood; A. E. Batten, Clerk and Registrar, Blackwood; J. Anson Smith, M.D., Inspector, Blackwood.

Green, Sussex county; population, 888. D. H. Longcor, President, Newton; E. E. Cooper, Tranquility; S. S. Coleman, Tranquility; J. C. Clark, M.D., Andover; I. L. Labar, Clerk and Registrar, Tranquility.

Greenwich, Cumberland county; population, 1,145. Ethan Glaspey, President; John N. Fithian, Isaac D. Brown, J. W. Butler, Clerk; S. M. Snyder, M.D., Inspector, all of Greenwich.

Greenwich, Gloucester county; population, 874. Frank Featherer, President, Gibbstown; John Warner, Gibbstown; Jos. Munyan, Gibbstown; Jos. Murray, Clerk, Paulsboro; Jacob Allen, Registrar, Gibbstown; Robert Reeves, M.D., Inspector, Paulsboro.

Greenwich, Warren county; population, 904. John H. Cypher, President, Stewartsville; Jacob R. Rush, Stewartsville; Geo. C. Hamlen, Stewartsville; William Sherrer, Clerk, Bloomsbury; F. W. Curtis, M.D., Inspector, Stewartsville.

Haddon, Camden county; population, 1,465. Alfred M. Matthews, President, Westmont; Albert J. Cline, Westmont; Harry E. Locke, Westmont; James St. C. Williams, Clerk and Registrar, Westmont; Edward B. Rogers, Inspector, Collingswood.

Hamilton, Atlantic county; population, 2,271. Charles Stewart, President; Harrison Wilson, Charles D. Makepeace, Harry Jenkins, Thompson Hoover, Clerk; Henry C. James, M.D., Inspector, all of Mays Landing.

Hamilton, Mercer county; population, 7,899. E. B. Woodward, M.D.,

* No report received.

President, Yardville; Chas. Comp, Yardville; Henry Davis, Hamilton Square; Alex. Laird, Bromley Place; Harry Rogers, Hamilton Square; John R. Caldwell, Clerk, Broad Street Park; Jas. N. Reed, Inspector, Homedell.

Hampton, Sussex county; population, 671. Isaac D. Williams, President, Baleville; Simeon Yetta, Baleville; John A. Sigler, Halsey; J. W. Thompson, Clerk and Registrar, Swartwood; H. E. Riddell, M.D., Inspector, Branchville.

Hanover, Morris county; population, 6,228. Harrison D. Meade, President, Hanover; Edward J. Connolly, Whippany; John Gagenheimer, Whippany; Judd Condit, Boonton; Dr. R. V. D. Totten, Wm. B. Davis, Clerk, Registrar and Inspector, Morris Plains.

Hardwick, Warren county; population, 405. Isaac J. Konkle, President, Blairstown; Hiram France, Blairstown; Jacob Bugle, Blairstown; M. C. Hill, Clerk and Registrar, Marksboro; H. O. Carhart, M.D., Inspector, Blairstown.

Hardyston, Sussex county; population, 5,210. Wm. Stephens, President, Franklin Furnace; Jas. McCue, Stockholm; R. L. Edsall, Hamburg; Smith Simpson, Registrar, Hamburg; Ed. P. Updegrave, Inspector, Hamburg.

*Harmony, Warren county; population, 1,490. Freeman Schuler, Registrar, Phillipsburg, R. F. D. No. 2.

Harrington, Bergen county; population, 538. L. B. Sneden, President, Northvale; Chas. F. Semino, Northvale; Jas. J. Muzzio, Northvale; Arnold Kober, Clerk and Registrar, Northvale; C. R. Richardson, M.D., Inspector, Closter.

Harrison, Gloucester county; population, 1,682. Samuel T. Stratton, President, Ewan; W. W. Justice, Richwood; I. S. White, Mullica Hill; S. F. Ashcraft, M.D., Mullica Hill; Eli Heritage, Assessor, Richwood.

Hillshoro, Somerset county; population, 2,313. J. V. D. Brokaw, President, Belle Mead; John M. Sutphen, Three Bridges; Henry Seebing, Neshanic; W. H. Merrell, M.D., Clerk, Somerville; Harry Van Nuys, Registrar and Inspector, Millstone.

Hillsdale, Bergen county; population, 1,072. Chas. S. Van Wagoner, President; John H. Westphal, A. Mohnking, A. L. Fritz, Clerk; John W. Kenilworth, Registrar, all of Hillsdale; George M. Levitas, M.D., Inspector, Westwood.

Honokus, Bergen county; population, 1,881. Jacob C. Straut, President, Allendale; Charles D. Vanderbeck, Ramsey; Frank J. Dater, Mahwah; James Devine, Jr., Clerk and Registrar, Mahwah; Charles P. Deyoe, M.D., Inspector, Ramsey.

Holland, Hunterdon county; population, 1,699. Geo. N. Becker, President, Milford; E. J. Duckworth, Little York; Stewart Burgstresser, Milford; H. B. Vansyckel, Clerk and Registrar, Mt. Pleasant; A. A. Heil, M.D., Inspector, Milford.

Holmdel, Monmouth county; population, 1,058. Westley Mason, President, Keyport; Jonathan I. Holmes, Holmdel; Jacob Lambertson, Hazlet; Geo. Lambertson, Clerk, Hazlet; Wm. M. Ackerson, Registrar, Hazlet; C. A. Palmer, Inspector, Holmdel.

Hope, Warren county; population, 1,119. Geo. A. Henry, President, Great Meadows; I. B. Hopkins, Great Meadows; Clark Wilson, Hope; C. S. Bartow, Clerk and Registrar, Great Meadows; Walter Storm, Inspector, Hope.

* No report received.

Hopewell, Cumberland county; population, 1,818. D. D. Davis, President, Shiloh; B. Frank Sharp, Bridgeton; Ephraim G. Hyars, Bridgeton; C. E. Bowen, Clerk, Shiloh.

Hopewell, Mercer county; population, 3,171. Joseph R. Burroughs, President, Pennington; Isaac B. Scudder, Titusville; David S. Hill, Mount Rose; Charles H. Hart, Clerk and Registrar, Titusville; J. W. Richards, M.D., Inspector, Pennington.

Howell, Monmouth county; population, 2,703. Wm. P. Havens, M.D., President and Inspector, Farmingdale; B. M. Cooper, Lakewood; R. H. Morris, Adelphia; Chas. E. Ferry, Farmingdale; James H. Butcher, Clerk and Registrar, Freehold, R. F. D. No. 2.

***Hudson county;** population, 537,231. James L. Lynch, Secretary.

Independence, Warren county; population, 867. W. H. McCormick, President, Vienna; A. B. Leigh, Great Meadows; John Lommason, Vienna; F. W. Haggerty, Clerk, Vienna; E. Y. Williams, Registrar, Great Meadows.

***Jackson, Ocean county;** population, 1,325. Geo. C. Hankins, Clerk, Vanhiseville.

Jefferson, Morris county; population, 1,303. Horace L. Cook, President, Lake Hopatcong; William P. Davenport, Stockholm; Edgar McCormack, Oak Ridge; Charles Chamberlain, Clerk and Registrar, Wharton, R. F. D.; Joseph P. Riggs, M.D., Inspector, Oak Ridge.

Kingwood, Hunterdon county; population, 1,265. Stanford Vanderbilt, President, Frenchtown; Wm. R. S. Cook, Raven Rock; R. Keath, Frenchtown; Samuel J. Snyder, Secretary and Registrar, Frenchtown; F. S. Grim, M.D., Inspector, Baptisttown.

Knowlton, Warren county; population, 1,556. Oscar Smith, President, Hainesburg; Mahlon Kinney, Delaware; Frank Clifton, Delaware; William E. Gilbert, Clerk, Columbia.

Lacey, Ocean county; population, 602. G. E. Wallace, M.D., President and Inspector; Geo. W. Frazier, A. H. Grant, Wm. R. Holmes, B. F. Mathews, Clerk and Registrar, all of Forked River.

Lafayette, Sussex county; population, 683. Jacob S. Losey, President; John D. Ackerson, Raymond Snyder, William S. Vought, Clerk and Registrar, all of Lafayette.

***Lakewood, Ocean county;** population, 5,149. H. J. Terwilliger, Secretary, Lakewood.

Lands, Cumberland county; population, 6,435. L. F. Hatch, M.D., President, Vineland; Thos. Fox, Willow Grove; Alex. Huston, Jacob Simonson, Louis Raffo, Robert E. Chalmers, Clerk and Registrar; Chas. M. Gray, M.D., Inspector, all of Vineland.

Lawrence, Cumberland county; population, 1,746. E. L. Mulford, President; D. W. Sheppard, C. S. Sterns, L. M. Hogbin, Clerk; F. B. Sheppard, Registrar, all of Cedarville.

Lawrence, Mercer county; population, 2,522. John E. Gordon, M.D., President, Princeton; Morgan B. Van Hise, Trenton, R. F. D.; Jasper Maple, Princeton; Frank Pierson, Clerk and Registrar, Lawrenceville; E. K. Fee, M.D., Inspector, Lawrenceville.

Lebanon, Hunterdon county; population, 2,179. Jacob N. Alpaugh, President, Glen Gardner; Peter C. Castner, Changeewater; J. Frank Lance, Port Murray; Geo. H. Castner, Clerk and Registrar, Califton, R. F. D. No. 1; Edgar Hunt, M.D., Inspector, Glen Gardner.

* No report received.

Linden, Union county; population, 1,988. John P. Winans, President, Linden; George W. Bauer, Linden; John E. Tucker, Elizabeth; John S. Mesler, Rahway; Peter Lindsay, Jr., Elizabeth; Frank B. Stimson, Secretary and Registrar, Linden; George S. Everett, Inspector, Linden.

***Little Egg Harbor, Ocean county;** population, 388. Millard F. Parker, Clerk, Parkertown.

Little Falls, Passaic county; population, 3,759. Chas. Barth, President, Eugene Shori; David Hawthorne, Alfred Halsey, Fred Henri, Wm. M. Zelfi, Clerk and Registrar, all of Little Falls.

Livingston, Essex county; population, 1,025. F. M. Hoffman, President, Livingston; Sidney B. Winans, Livingston; Gotlieb Ochs, Chatham; E. E. Burnet, Clerk and Registrar, Chatham.

Lodi, Bergen county; population, 693. Chas. Kinzley, Frank Switz, John Turick, Jr., John Clausen, Jr., Clerk and Registrar, Hackensack, Sub Station No. 2.

Logan, Gloucester county; population, 1,523. Wilbur F. Beckett, President, Swedesboro; Wm. F. Justice, Bridgeport; Charles Lamson, Repaupo; S. B. Platt, Assessor, Bridgeport.

***Long Beach, Ocean county;** population, 107. Chas. E. Sherborne, Clerk, Long Beach.

***Lopatcong, Warren county;** population, 766. Frank Cline, Registrar, Shimers.

Lower, Cape May county; population, 1,138. John C. Elliott, President, Cold Spring; William L. Garretson, Erma; J. Durrell Hoffmann, Fishing Creek; D. Morrell Woolson, Clerk, Fishing Creek; Wilson Lake, M.D., Registrar and Inspector, Erma.

Lower Alloways Creek, Salem county; population, 1,252. Albert M. Carll, President, Harmersville; Thomas S. Nixon, Canton; Lewis F. Smith, Hancock's Bridge; Frank B. Harris, M.D., Canton; Edward Hancock, Clerk, Registrar and Inspector, Hancock's Bridge.

Lower Penns Neck, Salem county; population, 1,544. Hance Jaquett, President, Pennsgrove; Chas. Bright, Pennsville; David Dixon, Salem; Ellsworth I. Ireland, Clerk and Registrar, Pennsville.

Lumberton, Burlington county; population, 1,768. Wm. Jones, President, Lumberton; A. E. Haines, Medford; J. C. Walters, Hainesport; Wm. C. Parry, M.D., Hainesport; E. C. Davis, Clerk, Registrar and Inspector, Lumberton.

Madison, Middlesex county; population, 1,621. Frank P. Lambertson, President, Cliffwood; Ambrose Green, Old Bridge; I. S. Crandall, M.D., Old Bridge; James Fountain, Clerk, Old Bridge; D. H. Brown, Registrar, Old Bridge; Edward Barker, Inspector, Matawan.

Manalapan, Monmouth county; population, 1,375. Edward Hendrickson, President, Englishtown; J. C. Sutphen, Tennent; W. C. Hartshorne, Freehold; A. T. Applegate, M.D., Englishtown; Garret B. Conover, Clerk, Englishtown; W. Denise Herbert, Registrar, Englishtown.

Manchester, Ocean county; population, 1,112. E. F. Larrabee, President, Lakehurst; C. Rhoads, Lakehurst; Peter Christofferson, Whittings; Harold Pittis, M.D., Clerk and Inspector, Lakehurst; Amos Bozarth, Inspector, Lakehurst.

***Mannington, Salem county;** population, 1,606. Jonathan B. Grier, Clerk and Registrar, Salem.

Mansfield, Burlington county; population, 1,526. A. H. Patterson,

* No report received.

M.D., President and Registrar, Georgetown; Frank B. Haines, Columbus; Elmer L. Tallman, Columbus; Wm. R. Sharp, Columbus; Jos. H. Armstrong, Clerk and Registrar, Columbus.

Mansfield, Warren county; population, 1,238. William Lance, President, Port Murray; Jacob Thomas, Port Murray; John C. Beatty, Port Murray; Wm. P. Baylor, Clerk and Registrar, Washington, R. F. D. No. 2; H. S. Funk, Inspector, Port Murray.

Mantua, Gloucester county; population, 1,529. Isaac Dilks, President, Sewell; Edward Kean, Mantua; John S. Kincard, Sewell; Wm. S. Hurff, Clerk and Registrar, Sewell; E. Z. Hillegas, M.D., Inspector, Mantua.

*Marlboro, Monmouth county; population, 1,754. J. D. Ely, M.D., Clerk, Marlboro.

Matawan, Monmouth county; population, 1,472. Jacob Meinzer, President, Matawan; Lewis H. Stemler, Matawan; John D. Ivins, Cliffwood; Daniel Martin, Clerk, Matawan; Richard Heuser, Registrar, Matawan; Nathan Ervin, Inspector, Matawan.

Maurice River, Cumberland county; population, 2,124. Charles W. Champion, President, Dorchester; Charles Grassman, Port Elizabeth; William Carlisle, Delmont; Henry Reeves, Jr., Registrar, Leesburg.

Medford, Burlington county; population, 1,903. Joshua S. Wills, President; Samuel S. Evans, Frank A. Braddock, Wm. M. Potts, Registrar, all of Medford.

Mendham, Morris county; population, 792. W. B. Woodhull, President, Brookside; M. Fred Babbitt, Mendham; M. S. Burnett, Chester; Frank Dean, Clerk, Brookside; F. H. Garabrant, Registrar, Brookside.

Middle, Cape May county; population, 2,974. L. M. Swain, President, Swainton; J. Swing Willis, Cape May C. H.; Ralph Schellinger, Green Creek; Stillwell H. Townsend, Clerk and Registrar, Cape May C. H.; J. Morgan Dix, M.D., Inspector, Cape May C. H.

Middletown, Monmouth county; population, 6,653. Ernest H. Taylor, President, Middletown; D. W. Van Note, Belford; J. N. Johnson, Jr., Belford; A. M. Posten, Navesink; Frank Scott, Red Bank; Henry D. Smith, Clerk, Middletown; Omar Sickles, Registrar, Navesink; O. W. Budlong, M.D., Inspector, Belford.

Midland, Bergen county; population, 1,480. Carl H. Pauly, President, Oradell; August C. Ohle, Maywood; Otto Weisgerber, Ridgewood; John D. Bogert, Clerk and Registrar, Ridgewood, R. F. D. No. 1; Frank Freeland, M.D., Inspector, Maywood.

Millburn, Essex county; population, 3,720. Henry S. Acken, President, Maplewood; Ernest L. Smithers, Millburn; Daniel B. Kingsford, Short Hills; Wellington Campbell, M.D., Short Hills; Charles R. Reeve, Clerk and Registrar, Millburn; Felix McGee, Inspector, Millburn.

Millstone, Monmouth county; population, 1,461. A. B. Chamberlin, President, Perrineville; Geo. M. Davison, Perrineville; John H. Ely, Robbinsville; Geo. J. Ely, Clerk and Registrar, Cranbury, R. F. D.; Wm. T. MacMellen, M.D., Inspector, Perrineville.

Monroe, Gloucester county; population, 3,015. William P. Buck, President; E. F. Evans, D. S. Champion, J. G. Edwards, M.D., John W. McClure, Clerk, all of Williamstown.

Monroe, Middlesex county; population, 1,723. John D. Butcher, President, Cranbury; Harry Roger, Cranbury; George McDowell, Cranbury; Robt. R. Vandenberg, Clerk, Prospect Plains; J. L. Suydam, M.D., Jamesburg.

* No report received.

Montague, Sussex county; population, 621. George A. Clark, President; Timothy Shay, Alfred Hastrum, Geo. McCarty, Clerk and Registrar; Dr. G. O. Pobe, Inspector, all of Port Jervis, N. Y., R. F. D.

*Montgomery, Somerset county; population, 1,637. Jacob Boice, Clerk, Harlingen.

*Montville, Morris county; population, 1,944. Frank H. Starkey, Clerk, Montville.

Morris, Morris county; population, 3,161. Thomas T. Sands, President and Registrar, Morristown; Lewis E. Clark, Morristown; Willis H. Dutton, Morristown; Watson A. Barton, Morris Plains; J. Paul Jamieson, Clerk, Morristown.

Mount Laurel, Burlington county; population, 1,573. Edward L. Godfrey, President, Moorestown; J. Harvey Darnell, Masonville; James J. Lavery, Masonville; Benj. M. Haines, Clerk and Registrar, Moorestown; F. G. Stroud, M.D., Inspector, Moorestown.

Mount Olive, Morris county; population, 1,160. George N. Salmon, President, Flanders; George Dorland, Flanders; Hiram Dilley, Mt. Olive; Hez. Smith, Clerk and Registrar, Flanders; Jas. Horn, M.D., Inspector, Flanders.

Mullica, Atlantic county; population, 811. Jesse R. Abbott, President, Hammonton; Joseph Albor, Hammonton; Ross B. Pierce, Egg Harbor; John Mick, Elwood; John D. Carver, Clerk, Elwood; Jesse R. Abbott, Registrar, Hammonton.

Neptune, Monmouth county; population, 5,551. Leonard Hult, President, Bradley Park; Chas. A. Lane, Asbury Park; Fred D. Hurley, West Grove; John Messler, West Grove; Adrian J. L. Hommel, Clerk, Registrar and Inspector, Ocean Grove.

New Hanover, Burlington county; population, 948. Albert Watson, President, Wrightstown; Richard W. Harker, Pointville; George Parker, Cookstown; Chas. Remine, Clerk and Registrar, Wrightstown; Howard Allen, Inspector, New Egypt.

New Providence, Union county; population, 526. Henry S. Fullerton, President, Scotch Plains; Frank C. Schaffer, Scotch Plains; Frank Exner, Scotch Plains; P. Garfield Johnson, Clerk, New Providence; Dr. B. H. Bebout, Inspector, Stirling.

Northampton, Burlington county; population, 5,652. Wm. H. Mason, President; S. Earl Asay, Harry Hawkins, Sr., T. Walter Borton, Chas T. Morton, W. T. Stewart, Clerk and Registrar; R. H. Parsons, M.D., Inspector, all of Moorestown.

*North Bergen, Hudson county; population, 15,662. Thomas Dubelbeiss, Clerk, North Bergen.

North Brunswick, Middlesex county; population, 990. William Vincent, President; Alfred Yorsten, Frank G. Hart, Isaac V. Williamson, Clerk and Registrar, all of New Brunswick, R. F. D.; J. D. Ten Eyck, Inspector, Franklin Park.

*North Hanover, Burlington county; population, 696. Benj. Harker, Jr., Clerk, Wrightstown.

North Plainfield, Somerset county; population, 886. Wm. Anderson, President, Plainfield; Alex. Archbold, Scotch Plains; Albert Brokaw, Bound Brook; Francis E. Bodin, Clerk, Watchung; Theo. H. A. Luerssen, Inspector, Watchung.

Ocean, Monmouth county; population, 1,377. Wm. B. Ireland, Presi-

* No report received.

dent, Oakhurst; J. F. Woolley, Oakhurst; Borden A. Jeffrey, Elberon; H. G. Van Note, Clerk and Registrar, Oakhurst; E. M. Beach, M.D., Health Officer, West Long Branch.

Ocean, Ocean county; population, 397. H. R. Eiseman, President; W. B. Wilkins, Clerk, Waretown; P. W. Warren, Inspector.

*Oldmans, Salem county; population, 1,364. E. E. Somers, Registrar, Pedricktown.

Orvil, Bergen county; population, 970. J. W. Quackenbush, President; D. E. Mackley, E. J. Doty, G. M. White, Clerk and Registrar, all of Waldwick.

*Overpeck, Bergen county; population, 4,512. Wm. H. Hunter, Registrar, Ridgefield Park.

Oxford, Warren county; population, 3,444. L. B. Hoagland, M.D., President, Oxford; George German, Buttsville; George Potts, Oxford; William Cole, Belvidere; Michael Mountain, Clerk and Registrar, Oxford.

Pahaquarry, Warren county; population, 205. Jason G. Spangenburg, President; William Brink, Hiram Zimmerman, Registrar, all of Mill Brook.

Palisades, Bergen county; population, 1,141. Frederick Heine, President, New Bridge; Carl Ufhell, Peetzburg; John Vanderbeck, Dumont; George Gengenagel, Clerk and Registrar, Peetzburg; Chester A. King, Inspector, Oradell.

*Palmyra, Burlington county; population, 2,801. F. Blackburn, Clerk, Registrar and Inspector, Palmyra.

*Passaic, Morris county; population, 2,165. Walter J. Swenson, Clerk and Registrar, Stirling.

Pemberton, Burlington county; population, 1,679. Walter E. Woolston, President, Mt. Holly; John Davis, Brown's Mills; Victor Bush, Pemberton; E. Hollingshead, M.D., Pemberton; M. W. Hargrove, Clerk, Brown's Mills; Barclay Seeds, Registrar, Pemberton.

Pensaunken, Camden county; population, 4,169. Isaiah S. Hatch, President, Delair; William Wimer, Delair; G. Loeling, M.D., Pensaunken; Harry E. Horner, Clerk and Registrar, Merchantville; Job Pidgeon, Inspector, Pensaunken.

Pequannock, Morris county; population, 1,921. A. J. Slingerland, President, Pompton Plains; Thos. Dodd, Lincoln Park; Fredk. Ricker, Butler; Alfred Gilland, Clerk and Registrar, Pompton Plains; C. D. V. Romondt, M.D., Inspector, Pompton Plains.

Pilesgrove, Salem county; population, 1,786. W. C. Richman, M.D., President; J. G. Borton, C. B. McAllister, M. W. Buzby, Clerk, Registrar and Inspector, all of Woodstown.

*Piscataway, Middlesex county; population, 3,523. George W. Coriell, Registrar, New Market.

*Pittsgrove, Salem county; population, 2,394. George Schalick, Clerk and Registrar, Centreton.

Plumsted, Ocean county; population, 1,123. Chas. W. Hopkins, President; James Larkin, Dayton Hopkins, Geo. Hartshorn, Clerk and Registrar; J. Wm. Bickler, M.D., Inspector, all of New Egypt.

*Pohatcong, Warren county; population, 3,202. Harry E. Boyer, Clerk and Registrar, Springtown.

Pompton, Passaic county; population, 4,044. Edward R. Brown, President, Haskell; Walter C. White, Butler; James H. Vreeland, Midvale;

* No report received.

David Beam, Clerk and Registrar, Midvale; D. N. Shippee, M.D., Inspector, Wanaque.

Princeton, Mercer county; population, 1,178. A. K. Macdonald, M.D., President and Inspector; M. Taylor Pyne, James Margerum, William I. Leigh, J. W. L. Anderson, S. P. Stryker, Clerk and Registrar, all of Princeton.

*Quinton, Salem county; population 1,091. Joseph Powell, Clerk, Quinton.

Randolph, Morris county; population, 2,307. William J. Curnow, President, Dover; Michael H. Maloney, Dover; George V. Lauterman, Mt. Freedom; Richard L. Cook, M.D., Dover; Ellison Coe, Clerk and Registrar, Mt. Freedom.

Raritan, Hunterdon county; population, 1,310. Joel Hellyer, President, Flemington; John Rockafellow, Flemington; Jos. Alvater, Flemington; Theo. H. Dilts, Registrar, Three Bridges; O. H. Sproul, M.D., Inspector, Flemington.

Raritan, Middlesex county; population, 2,707. Peter S. Meeker, President, New Brunswick; Edward Pfeiffer, Fords; Wm. R. Drake, Stelton; W. R. Woodward, Clerk, New Brunswick, R. F. D. No. 1; Wm. T. Woerner, Registrar, New Brunswick.

Raritan, Monmouth county; population, 1,583. J. L. T. Webster, President, Hazlet; Chas. Carr, Keansburg; Robert L. Brown, Keyport; P. O. Weigand, Hazlet; D. E. Roberts, M.D., Keyport; Herman L. Lehr, Clerk, Registrar and Inspector, Keansburg.

Readington, Hunterdon county; population, 2,569. Calvin C. Huff, President, Three Bridges; Silas Schomp, Stanton; Henry Miller, White House; W. T. Hoffman, Clerk and Registrar, White House Station; F. L. Johnson, M.D., Inspector, Stanton.

Riverside, Burlington county; population, 4,011. Jacob Theurer, President; Henry Taubel, J. Taylor Neal, Charles Heiss, Clerk and Registrar; Chauncey B. Lambert, M.D., Inspector, all of Riverside.

Riverdale, Bergen county; population, 450. Edwin A. Havers, President; Julius Kessler, Ellis Collignon, M. J. Ford, Clerk and Registrar; G. M. Levitas, M.D., Inspector, all of Westwood.

Rockaway, Morris county; population, 4,835. Calvin Lawrence, President, Dover; James Arthur, Wharton; Sidney F. Cook, Denville; Joseph Hitchens, Rockaway; William Pierson, Wharton; James Lash, Clerk and Registrar, Denville; Samuel A. Blanchard, Inspector, Rockaway.

Roxbury, Morris county; population, 2,414. Theodore F. King, President, Ledgewood; Chas. I. King, Succasunna; John Todd, Landing; E. W. Kilpatrick, Clerk and Registrar, Landing.

Saddle River, Bergen county; population, 3,047. Otto P. Pehle, President, Rochelle Park; Adam Hopper, Fair Lawn; Isaac A. Hopper, Clerk and Registrar, Fair Lawn.

*Sandyston, Sussex county; population, 855. W. H. Van Sickle, Clerk, Layton.

Sayreville, Middlesex county; population, 5,733. Joseph Allgair, President; August Rhode, Robt. Letts, J. H. Beekman, M.D., Thos. Creamer, Clerk and Registrar; Henry Boyler, Inspector, all of Sayreville.

*Shamong, Burlington county; population, 483. J. W. B. Jennings, Assessor, Indian Mills.

Shrewsbury, Monmouth county; population, 3,238. Abram T. Bennett,

* No report received.

President and Registrar, Fairhaven; Aaron Armstrong, Shrewsbury; Forman R. Smith, Fairhaven; John C. Crawford, Tinton Falls; Raymond Doughty, Clerk, Fairhaven; Dr. Robert Dickson, Inspector, Fairhaven.

Southampton, Burlington county; population, 1,778. John Brushwood, President; Frank Simons, George W. Elbert, Charles G. Naylor, Clerk and Registrar; J. C. Brown, M.D., Inspector, all of Vincentown.

South Brunswick, Middlesex county; population, 2,443. I. S. Bennett, President, Jamesburg; Arthur Turton, Monmouth Junction; H. W. Jeffers, Plainsboro; Wm. Perkins, Clerk and Registrar, Kingston.

South Harrison, Gloucester county; population, 694. Clayton G. Kirby, President, Mullica Hill; Mathew Allen, Mullica Hill; George F. Wilkinson, Basset; Samuel Ashcraft, M.D., Mullica Hill; D. C. Lippincott, Clerk and Registrar, Harrisonville.

South Orange, Essex county; population, 2,979. Wm. H. Knox, President, South Orange; William H. Kemp, Maplewood; William A. Greenaway, Irvington; Edward R. Arcularius, Clerk, Hilton; William G. Miller, Registrar, Maplewood; G. H. Taylor, M.D., Inspector, Maplewood.

Sparta, Sussex county; population, 1,579. Manning Sickles, President, Sparta; Walter D. Byram, Houses; Harry F. Collins, Ogdensberg; Sanford Reed, Clerk and Registrar, Houses; A. N. Jacobs, M.D., Inspector, Sparta.

Springfield, Burlington county; population, 1,278. Howard Lettis, President, Jobstown; Ezra F. Burr, Burlington; Harry C. Applegate, Johnstown; Aaron H. Burtis, Clerk, Mt. Holly, R. D. No. 2; Lyman Hollingshead, M.D., Inspector, Pemberton.

Springfield, Union county; population, 1,246. Robert Morrison, President; George Parcel, Frederick Kenlie, Lewis T. Terry, Clerk; J. A. Stites, M.D., Inspector, all of Springfield.

Stafford, Ocean county; population, 934. Charles H. Cranmer, President, Manahawkin; Wm. B. Sprague, Manahawkin; Samuel Cranmer, Cedar Run; J. Willits Berry, Clerk and Registrar, Manahawkin; Joshua Hilliard, M.D., Inspector, Manahawkin.

Stillwater, Sussex county; population, 796. A. C. Roof, President, Stillwater; Eugene Huff, Stillwater; Wm. P. Struble, Swartswood; E. W. Landes, M.D., O. Van Horn, Clerk and Registrar, Stillwater.

Stow Creek, Cumberland county; population, 880. Albert Shimp, President; Charles Ware, Eric Carlson, Wm. H. Davis, Clerk and Assessor, all of Bridgeton, R. F. D.

***Tabernacle, Burlington county;** population, 487. Geo. H. Wisham, Clerk, Vincentown, R. F. D. No. 2.

Teaneck, Bergen county; population, 2,082. J. E. Pearce, President, Englewood; Christian Benson, Englewood; George V. Demarest, Hackensack; David Beck, Hackensack; Peter I. Ackerman, Clerk and Registrar, Hackensack; Robert Stevenson, Inspector, Englewood.

Tewksbury, Hunterdon county; population, 1,742. Levi M. Hoffman, President, Califon; Frederick L. Lindabury, Lebanon; Jacob J. Neff, New Germantown; Francis A. Apgar, M.D., New Germantown; Hezekiah Philhower, Registrar, Califon.

Union, Bergen county; population, 4,076. Andrew Egert, President; Charles Rehboldt, George Smith, John W. Clarke, M.D., Charles J. Rodgers, Clerk and Registrar; Michael A. Byron, Inspector, all of Lyndhurst.

* No report received.

Union, Hunterdon county; population, 930. Geo. B. Smith, President, Clinton; Godfrey Emery, Jutland; Jas. Gano, Pattenburg; A. J. Hann, M.D., Pattenburg; Morris Stockton, Clerk and Registrar, Pattenburg.

Union, Ocean county; population, 982. J. Calvin Bower, President; John W. Chew, Charles H. Reeves, R. F. Elberson, Clerk and Registrar, all of Barnegat.

Union, Union county; population, 3,419. D. H. Beach, President, Union; Gottlieb Schmable, Lyons Farms; Howard B. Klein, Hilton; D. Hobart Sayre, Registrar, Union.

Upper, Cape May county; population, 1,483. Harry Young, President; Beesley's Point; Z. A. Townsend, Tuckahoe; James S. Smith, Petersburg; Jesse T. Young, Clerk, Beesley's Point; Somers C. G. Stephens, Registrar, Tuckahoe; Randolph Marshall, Inspector, Tuckahoe.

Upper Freehold, Monmouth county; population, 2,053. Isaac Dawes, President; John Havens, Joseph Johnson, R. F. Garrison, M.D., Clerk, William Quicksall, Inspector, all of Imlaystown.

Upper Penns Neck, Salem county; population, 744. Joseph Clark, President; Joseph Lloyd, David Wright, Willard Layton, Clerk; C. L. Fleming, M.D., Inspector, all of Penns Grove.

Upper Pittsgrove, Salem county; population, 1,754. Chas. Driver, President, Monroeville; William Mayhew, Elmer; Walter Lawrence, Elmer; Geo. W. Fitch, M.D., Daretown; R. A. Robinson, Clerk and Registrar, Monroeville.

Vernon, Sussex county; population, 1,675. Sherwood B. Garlinghouse, President, Vernon; Charles L. Giveans, Glenwood; Nicholas P. Ryerson, Registrar, Glenwood; Edw. P. Uptegrove, M.D., Inspector, Hamburg.

Voorhees, Camden county; population, 1,174. Chas. Hammel, President, Marlton; John P. Thompson, Gibbsboro; Albert Rau, Ashland; Wm. Westcott, M.D., Berlin; S. H. Gardiner, Clerk and Registrar, Ashland.

Wall, Monmouth county; population, 3,817. Chas. White, President, Belmar; E. C. White, Belmar; Geo. E. Rogers, Belmar; S. Bartley Pearce, Brielle; Wm. W. Trout, M.D., Spring Lake; Geo. E. Rogers, Clerk, Registrar and Inspector, Belmar.

Walpack, Sussex county; population, 286. Eugene Rosenkrans, President, Flatbrookville; Lester J. Tullor, Walpack Center; Emmet Struble, Walpack Center; J. W. Bunnell, Registrar, Walpack Center.

Wantage, Sussex county; population, 2,077. Frank J. Coe, President; Frank Meddaugh, Jasen House, James Wilson, S. M. Parcel, Clerk and Registrar; H. D. Van Gasbeck, Inspector, all of Sussex.

***Warren, Somerset county;** population, 1,036. E. E. Sage, Clerk, Registrar and Inspector, Plainfield, R. F. D. No. 3.

Washington, Bergen county; population, 100. Paul C. Schultz, Registrar, Westwood, R. F. D. No. 2.

Washington, Burlington county; population, 597. Joseph M. Birdsall, President, Green Bank; Thos. K. Sooy, Green Bank; Julius Gerber, Batso; A. E. Koster, Registrar, Green Bank.

Washington, Gloucester county; population, 1,396. Augustus Ther, President, Sewell; G. Clark Shuster, Sewell; G. R. Hurff, Turnersville; Jos. E. Hurff, M.D., Blackwood; C. D. Nicholson, Clerk and Registrar, Turnersville.

Washington, Mercer county; population, 1,090. Chas. H. Conover,

* No report received.

President, Hightstown; Chas. Tindall, Windsor; Mahlon Mershon, Robbinsville; C. N. Hutchinson, Robbinsville; E. B. Yard, Clerk, Robbinsville; F. M. Arthur, M.D., Inspector, Hamilton Square.

Washington, Morris county; population, 1,900. Fred Apgar, President, Califon; A. Gulick, Hackettstown; G. H. Sliker, Clerk and Registrar, Port Murray; Lew Dufford, Inspector, German Valley.

Washington, Warren county; population, 1,923. William Larison, President; Daniel M. Wyckoff, Orin Perry, Charles B. Smith, M.D., Samuel Rinehart, Clerk, all of Washington.

*Waterford, Camden county; population, 1,484. Chas. D. Heath, Clerk and Registrar, Berlin.

Wayne, Passaic county; population, 2,281. Edward Merselis, President, Paterson; Geo. W. Colfax, Pompton; Larry Berdaa, Paterson; Isaac Hopper, Clerk, Paterson, R. F. D. No. 1; Thes. D. Ryerson, Registrar, Wayne.

Weshawken, Hudson county; population, 11,228. Chas. W. Kugler, President; Thomas L. Anderson, Thomas J. Gallagher, Frank G. McCort, Silas W. Platner, John M. Hannan, Clerk; A. E. Fendrick, Inspector.

Westampton, Burlington county; population, 564. Wm. H. Austin, President; Burwood M. Haines, Frank McFarland, Hudson B. Haines, Clerk; Elmer D. Prickett, M.D., Inspector, all of Mt. Holly.

West Amwell, Hunterdon county; population, 866. Chas. A. Slack, President; Chas. E. Holcomb, Richard Runkel, Geo. H. Carr, Clerk and Registrar; F. W. Larison, M.D., Inspector, all of Lambertville, R. F. D.

West Deptford, Gloucester county; population, 2,057. J. Wilmer Leonard, President, Thorofare; J. A. Moore, Thorofare; R. M. Plum, Thorofare; James Carter, Clerk and Registrar, Thorofare; James Hunter, M.D., Inspector, Westville.

West Milford, Passaic county; population, 1,967. Walter Vreeland, President, Macopin; Samuel E. Cottes, Echo Lake; Theodore Stickle, Newfoundland; D. E. Drake, M.D., Newfoundland; John M. Weaver, Clerk and Registrar, Newfoundland.

West Windsor, Mercer county; population, 1,342. Jacob R. Wyckoff, President, Dutch Neck; Walter S. Grover, Princeton Junction; Hiram Mount, Trenton, R. F. D.; Hiram A. Cook, Clerk, Dutch Neck; H. J. Coleman, Registrar, Trenton, R. F. D. No. 2.

Weymouth, Atlantic county; population, 899. Wm. Wieher, President, Risley; Thos. Bailey, Tuckahoe; Hope W. Gandy, Tuckahoe; F. R. McKeague, Registrar, Tuckahoe; R. Marshall, M.D., Inspector, Tuckahoe.

Willingboro, Burlington county; population, 562. Elwood Hart, President, Rancocas; Jos. Wills, Jr., Burlington; John S. Perkins, Beverly; Howard J. Hart, Secretary and Registrar, Rancocas; E. D. Prickett, M.D., Inspector, Mount Holly.

Winslow, Camden county; population, 2,919. F. Presley, President, Elm; H. Kelling, Blue Anchor; F. Sickler, Sicklerville; Joseph H. Graham, Clerk and Registrar, Blue Anchor; C. Cunningham, M.D., Inspector, Hammonton.

Woodbridge, Middlesex county; population, 8,948. Louis E. Potter, President and Registrar, Woodbridge; Alfred P. Cranston, Colonia; F. Randolph Lee, Woodbridge; Anton Kuhlman, Sewaren; Geo. H. Brown,

Woodbridge; John S. Dooley, Clerk, Woodbridge; Robert A. Hirner, Inspector, Woodbridge.

*Woodland, Burlington county; population, 475. W. J. Buzby, Clerk, Chatsworth.

Woolwich, Gloucester county; population, 1,136. W. G. Simmons, M.D., Secretary, Swedesboro.

*No report received.

Names and Addresses of Physicians.

ATLANTIC COUNTY.

- Allen, C. C., Absecon.
Atherton, Andrew L., 1005 Pacific avenue, Atlantic City.
Bailey, A. W., 1809 Pacific avenue, Atlantic City.
Balliett, Lorenzo D., 1001 Atlantic avenue, Atlantic City.
Barbash, Samuel, 1906 Pacific avenue, Atlantic City.
Bartlett, Clara K., 11 N. North Carolina avenue, Atlantic City.
Beckwith, John T., 104 S. Ohio avenue, Atlantic City.
Bennett, Francis W., 1710 Pacific avenue, Atlantic City.
Bennett, Wm. H., Pacific and Ohio avenues, Atlantic City.
Berner, David, 1511 Pacific avenue, Atlantic City.
Bewley, Lyburn H., 1209 Pacific avenue, Atlantic City.
Bittler, J. C., Hammonton.
Bossert, Chas. L., 107 N. Virginia avenue, Atlantic City.
Boysen, T. H., Egg Harbor City.
Burt, F. C., Hammonton.
Carrington, Wm. J., 900 Pacific avenue, Atlantic City.
Chew, E. C., 28 Kentucky avenue, Atlantic City.
Conaway, W. P., 1723 Pacific avenue, Atlantic City.
Crosby, Geo. W., 716 Atlantic avenue, Atlantic City.
Crowell, Godfrey M., Hammonton.
Cunningham, Chas., Hammonton.
Cuskaden, A. D., 2000 Atlantic avenue, Atlantic City.
Darnall, W. E., 1719 Pacific avenue, Atlantic City.
Davenport, St. Elmo, 1413 Arctic avenue, Atlantic City.
Davis, Wm. P., 1721 Pacific avenue, Atlantic City.
De Silver, Jos. F., 1500 Pacific avenue, Atlantic City.
Divine, Jane S., 601 Pacific avenue, Atlantic City.
Doherty, Harry A., 2 S. Stenton Pl., Atlantic City.
Doriss, H. Stokes, 119 South Carolina avenue, Atlantic City.
Douglass, J. S., Tuckahoe.
Dourdedourne, Evaline, Longport.
Dubler, W. J., Minotola.
Duniap, Thos. G., 921 Pacific avenue, Atlantic City.
Durand, Jay I., 1616 Pacific avenue, Atlantic City.
Elmer, J. U., Egg Harbor City.
Ewens, Arthur E., Le Grande Apts., Atlantic City.
Fish, Clyde M., Pleasantville.
Fleming, Jno. R., 3 S. Montpelier avenue, Atlantic City.
Fletcher, Geo. H., 1910 Arctic avenue, Atlantic City.
Frank, M., Egg Harbor City.
Gardner, Wm. G., Atlantic City.
Garrabrant, C., 1001 Atlantic avenue, Atlantic City.
Gehring, G. P., Bakersville.
Gulon, Edward, Atlantic City.
Harker, G. H., Mays Landing.
Harley, H., Hammonton.
Harris, Robert E., 1407 Arctic avenue, Atlantic City.
Harvey, E. H., Atlantic City.
Harvey, H. T., 2 S. Morris avenue, Atlantic City.
Hawkins, Pompey L., 1813 Arctic avenue, Atlantic City.
Hickman, Walter A., 612 Pacific avenue, Atlantic City.
Hughes, J. Wm., 1903 Pacific avenue, Atlantic City.
Ireland, Milton S., 23 S. California avenue, Atlantic City.
James, H. C., Mays Landing.
Jonah, Wm. E., 1616 Pacific avenue, Atlantic City.
Joy, J. A., 1920 Pacific avenue, Atlantic City.
Judson, J. R., Pleasantville.
Lee, Bernard R., 901 Pacific avenue, Atlantic City.
Leonard, Isaac E., 28 N. Iowa avenue, Atlantic City.

Lyon, Malvern S., 716 Atlantic avenue, Atlantic City.

Madden, E. H., Absecon.
Madden, T. W., Absecon.

Marshall, Jos. C., 1517 Pacific avenue, Atlantic City.

Marvel, Emery, 1801 Pacific avenue, Atlantic City.

Marvel, Phillip, 1616 Pacific avenue, Atlantic City.

Metzler, V. W., Atlantic City.

McVay, James C., 707 Pacific avenue, Atlantic City.

Miller, D. J. M., 1700 Pacific avenue, Atlantic City.

Miller, Mary, Ventnor.

Morris, S. LeRoy, 109 New York avenue, Atlantic City.

Munro, H. C., Pleasantville.

Munson, M. L., 1503 Pacific avenue, Atlantic City.

North, J. H., Pleasantville.

North, James, 29 S. Tennessee avenue, Atlantic City.

Poland, Joseph, 1906 Pacific avenue, Atlantic City.

Pollard, W. M., 25 S. South Carolina, avenue, Atlantic City.

Porteous, Edward J., 1801 Pacific avenue, Atlantic City.

Reed, E. L., Pacific and Virginia avenues, Atlantic City.

Reed, J. W., Absecon.

Reed, Talbot, 400 Pacific avenue, Atlantic City.

Reilly, E. A., 20 S. Tennessee avenue, Atlantic City.

Reynolds, Walter, 27 S. Indiana avenue, Atlantic City.

Ritter, Henry, 9 N. Kennedy Pl., Atlantic City.

Schmidt, Wm. H., 31 S. Indiana avenue, Atlantic City.

Scott, Geo., 1109 Pacific avenue, Atlantic City.

Senseman, Theo., Pacific avenue and S. Charles Pl., Atlantic City.

Sharpe, Edward S., 30 N. Georgia avenue, Atlantic City.

Shlmer, A. Burton, 606 Pacific avenue, Atlantic City.

Shivers, Chas. H., 8 S. New Hampshire avenue, Atlantic City.

Silver, Homer I., 1910 Pacific avenue, Atlantic City.

Smith, Warren H., 22 S. Ohio avenue, Atlantic City.

Snowball, Jas. W., 1519 Pacific avenue, Atlantic City.

Sooy, Rich M., Pleasantville.

Sooy, Walter C., 1913 Pacific avenue, Atlantic City.

Souder, Lewis R., 1910 Pacific avenue, Atlantic City.

Steelman, Phillip S., Linwood.

Stewart, W. Blair, Pacific and North Carolina avenues, Atlantic City.

Stickney, Otis D., 922 Pacific avenue, Atlantic City.

Stille, Samuel, 1546 Atlantic avenue, Atlantic City.

Taggart, Thos. D., 22 S. Illinois avenue, Atlantic City.

Terry, Edward B., 25 N. Ohio avenue, Atlantic City.

Thompson, J. B., 1922 Pacific avenue, Atlantic City.

Townsend, Mary E., 13 S. Pennsylvania avenue, Atlantic City.

Tull, John A. C., 811 Pacific avenue, Atlantic City.

Well, Edwin M., Virginia Apts., Atlantic City.

Weinberg, Chas. B., 1006 Pacific avenue, Atlantic City.

Weiner, S. E., 30 N. Georgia avenue, Atlantic City.

Westcoat, Absalom S., 904 Pacific avenue, Atlantic City.

Westcott, Wm. C., 924 Pacific avenue, Atlantic City.

Westney, Alfred W., 1212 Pacific avenue, Atlantic City.

Westney, Howard J., 1212 Pacific avenue, Atlantic City.

Woodbert, Roy, 800 Pacific avenue, Atlantic City.

Wright, Elizabeth T., Galen Hall, Atlantic City.

Youngman, M. D., 1618 Pacific avenue, Atlantic City.

Youngman, Thomas, 1618 Pacific avenue, Atlantic City.

Zellie, Ernst, Sculville.

BERGEN COUNTY.

Adams, Chas. F., 229 Union street, Hackensack.

Alexander, Samuel, Park Ridge.

Armstrong, Samuel E., Rutherford.

Ayres, M. S., Fair View.

Banks, Hardy M., Englewood.

Bell, J. F., Englewood.

Best, Geo. B., Englewood.

Bleasley, Chas., Garfield.

Bleakstone, Frederick O., Gradell.

Blickston, M., Westwood.

Bonyage, H. A., Ridgewood.

Bradner, Fred E., Englewood.

Brevort, Henry H., Lodi.

Brewster, Grey O., Grantwood.

Brewster, Margaret P., Grantwood.

Brooks, Chas. D., Rutherford.

Brough, F. T., 35 Court street, Hackensack.

Brown, ———, Bergenfield.

Brown, G. E., 285 Main street, Hackensack.

Brundage, ———, Palisades Park.

Byers, C. W., Rutherford.

Calhoun, Chas., Rutherford.

Carlini, Lorenzo, 96 Palisade avenue, Garfield.

Carpenter, Wm. P., Hasbrouck Heights.

Clarke, John W., Lyndhurst.

Cone, R. S., Westwood.

Conover, E. E., Hasbrouck Heights.

Conrad, E. K., 40 Essex street, Hackensack.

Cottrell, Robert G., Tenafly.

Corn, David, Ridgewood Park.

Cottrell, Wm., Rutherford.

Craig, W. C., Ridgewood.

Crosby, C., Rutherford.

Datesman, C. W., Oradell.

Davenport, Geo. S., 45 Passaic avenue, Garfield.

Davis, John H., Rutherford.

De Groff, E., Ridgewood.

De Mund, Cornelius A., Ridgewood.

Demund, John T., Ridgewood.

Deyoe, Charles P., Ramsey.

Dwyer, Joseph W., 11 Hobart Pl., Garfield.

Edwards, ———, Englewood Hospital, Englewood.

Elsing, Henry, Ridgewood Park.

Evans, J. L., Woodcliff.

Finke, G. W., 14 Hudson street, Hackensack.

Freeland, F., Maywood.

Garrison, N. S., Rutherford.

Goldstein, ———, Englewood Hospital, Englewood.

Gregory, Thirza L., Englewood.

Hager, ———, Fort Lee.

Haine, E., Edgewater.

Hallett, F. S., Hackensack.

Hamilton, E. W., Oakland.

Haring, John J., Tenafly.

Harreys, C. W., Ridgewood.

Harreys, H. R., Ridgewood.

Harris, M. A., Union street, Hackensack.

Heilstern, E., Hudson Heights.

Heilstern, S. C., Fairview.

Hennessey, James F., Jr., 154 Passaic avenue, Garfield.

Hilfer, E. C., Fairview.

Hollister, H. H., Rutherford.

Holmes, Edwin, Englewood.

Hubbard, S. T., Edgewater.

Huff, Edmund N., 33 Tenafly Rd., Englewood.

Huger, Jos., Fort Lee.

Keating, W. T., Wyckoff.

Kiefer, R. A., Midland Park.

Kling, Chester A., Delford.

Knapp, R. G., 16 Hudson street, Hackensack.

Knox, C. A., Ridgewood Park.

Knox, H. L., 211 Union street, Hackensack.

Kothe, ———, Fairview.

Langdon, Marie G., Cortesville.

Langstroth, ———, Ridgewood.

Lansing, J. B. W., Tenafly.

Leitner, Geo. A., Piermont.

Levetus, G. M., Westwood.

MacKellar, J. W., Tenafly.

McDivitt, J. R., Dumont.

McDonald, H. G., 120 State street, Hackensack.

McFadden, 281 State street, Hackensack.

Moening, J. A., Park Ridge.

Morris, S. V., Hasbrouck Heights.

O'Brien, Paul W., Carlstadt.

Ockford, G. M., Ridgewood.

Ogden, W. E., East Rutherford.

Parkhurst, G. Harrison, Allendale.

Payne, Jos., Midland Park.

Pettit, H. H., Ridgewood.

Pilkin, Geo. P., Bergenfield.

Pittis, Godfrey, Allendale.

Pratt, J. E., Dumont.

Proctor, J. W., Englewood.

Richardson, Chas. A., Harrington.

Riordan, John, East Rutherford.

Robinson, E. J. L., Rutherford.

Robinson, S. E., Waldwick.

Rodman, R. W., Allendale.

Rush, Valentine, Jr., Englewood.

Sickenberger, Ernest F., Carlstadt.

St. John, David, 256 State street, Hackensack.

Stone, B. D., Westwood.

Stratton, Howard H., East Rutherford.

Stratton, S., East Rutherford.

Sullivan, Michael J., Palisade avenue, Englewood.

Swayze, A. A., 47 Essex street, Hackensack.

Taylor, W., Hackensack.

Teeter, J. N., Lydecker street, Englewood.

Tommasi, Charles F., 195 Harrison avenue, Garfield.

Townsend, T. E., Westwood.

Underwood, B. F., Ridgewood.

Vandewater, S. A., Oradell.

Van Dyke, Joseph S., Hackensack.

Van Horne, Byron G., Englewood.

Van Horne, Carrie C., Englewood.

Vroom, W. L., Ridgewood.

Ward, Alfred W., Closter.

Ward, G. Harold, Spring Lane, Englewood.
 White, G. H., 362 Main street, Hackensack.
 Williams, Wm., Rutherford.
 Wyckoff, J. T., Leonia.
 Wyler, Max, Fort Lee.
 Zabriskie, Simeon J., Westwood.

BURLINGTON COUNTY.

Adams, Ellsworth, Beverly.
 Baird, David, Florence.
 Barrington, Richard C., Mt Holly.
 Blair, J. E., Burlington.
 Boyesen, Peter, Riverton.
 Brannin, Jno. W., Mt. Holly.
 Brick, Benj. K., Marlton.
 Brown, David P., Crosswicks.
 Brown, J. C., Vincentown.
 Calver, G. W. H., Columbus.
 Cassidy, J. B., Burlington.
 Chaffee, Newton H., Chesterfield.
 Currie, Jos. J., Beverly.
 Davis, Jacob M., 6 West Union street, Burlington.
 Dey, Chas. L., Crosswicks.
 Dingle, C. E., 100 East Union street, Burlington.
 Dorety, Philip J., Florence.
 Dubell, Jas. E., Columbus.
 Faringer, H. E., Mt. Holly.
 Flynn, J. J., Mt. Holly.
 Gilbert, Jas. S., Bordentown.
 Glasgo, R. B., Burlington.
 Gordon, A. L., Burlington.
 Haines, Clifford, Vincentown.
 Haines, Edgar, Medford.
 Haines, Joseph R., Mt. Holly.
 Haines, W. F., Marlton.
 Hall, H. E., Riverton.
 Harbet, G. E. A., Pemberton.
 Harker, Chas., Mt. Holly.
 Hollingshead, E., Pemberton.
 Hollingshead, Lyman, Pemberton.
 Jacobs, N., Palmyra.
 Janney, Francis S., Riverton.
 Janney, J. D., Cinnaminson.
 Jones, E. G., 437 High street, Burlington.
 Killie, Chalkley J., Moorestown.
 Lambert, Chauncey D., Riverside.
 Leedom, I. C., Bordentown.
 Lemott, E., Riverside.
 Lore, A. P., Palmyra.
 MacDonald, George, Riverton.
 Marcy, Alex., Riverton.

Martin, W. L., Rancocas.
 Maurer, ———, Palmyra.
 McKelvey, George I., Moorestown.
 Meera, Jas., Maple Shade.
 Melcher, Wm. P., Mt. Holly.
 Mendenhall, C. D., Bordentown.
 Metzger, Emma P. W., Riverside.
 Mills, Charles S., Riverton.
 Mulford, E. R., East Union street, Burlington.

Newcomb, M. W., High street, Burlington.

Parry, W. C., Lumberton.
 Parsons, Richard H., Mt. Holly.
 Patterson, Austin H., Georgetown.
 Powell, Benajah B., Moorestown.
 Prickett, Elmer D., Mt. Holly.

Remer, D. T., Medford.
 Riche, E. Roberts, Moorestown.
 Rink, W. F., 33 W. Union street, Burlington.
 Roberts, J. V., Beverly.

Shaw, Amos, Jacobstown.
 Shippy, Wm. H., Bordentown.
 Sitgreaves, Charles B., Pemberton.
 Small, Alex., Riverside.
 Stees, Herman A., Beverly.
 Stokes, Jos., Moorestown.
 Stroud, F. G., Moorestown.
 Stroud, P. V. B., Marlton.

Thorn, Nathan, Moorestown.
 Tracy, George T., Beverly.
 Traub, Paul, Roebling.

Ulmer, D. H. B., Moorestown.

Vanderveer, Geo., Mt. Holly.

Wallace, ———, Fieldsboro.
 Wallace, C. R., Bordentown.
 Weeks, E. P., Riverside.
 Weller, H. K., Delanco.
 Whitaker, G. E., 446 High street, Burlington.
 Whitehead, Eugenia, Mt. Holly.
 Whitehead, G. L., Bordentown.
 Whitehead, W. W., Mt. Holly.
 Wilkinson, Geo. H., Moorestown.
 Wintersteen, J. B., Moorestown.
 Wittie, ———, Palmyra.

CAMDEN COUNTY.

Allen, Lida T., Collingswood.
 Anderson, Wm. M., Haddonfield.
 Andrews, P. W., 327 Market street, Camden.
 Artz, Jerome L., 3000 Westfield avenue, Camden.
 Bailey, W. G., 712 Broadway, Camden.
 Banks, G. L., 801 Walnut street, Camden.

Barrett, Wesley J., 510 Broadway, Camden.
 Beek, J. Alonzo, Gloucester City.
 Benjamin, Dowling, 215 Cooper street, Camden.
 Bennett, John K., Gloucester City.
 Bennett, Samuel, 217 Market street, Camden.
 Bentley, David F., 8th, cor. State street, Camden.
 Bicker, Francis J., 553 Van Hook street, Camden.
 Blackwood, J. W., Haddonfield.
 Blackwood, James N., 1396 Haddon ave., Camden.
 Blake, D. W. J., Gloucester City.
 Blake, Duncaam W., Gloucester City.
 Bonwill, Howard G., 921 S. 5th street, Camden.
 Braddock, C. S. J., Haddonfield.
 Branch, Clement T., 727 Walnut street, Camden.
 Bray, Walter S., 902 N. Second street, Camden.
 Browning, W. K., 315 Linden street, Camden.
 Bushey, Harry F., 701 Pine street, Camden.
 Bushey, S. G., 508 Haddon avenue, Camden.

Capuano, Giacinto, 829 S. Fourth street, Camden.
 Caspersen, Robt., 215 N. Third street, Camden.
 Ciccone, Vincent, 927 S. Third street, Camden.
 Clement, Edgar, Haddonfield.
 Clement, Lavinia B., Haddonfield.
 Cook, Frank B., Laurel Springs.
 Cramer, Alfred, 218 N. Fifth street, Camden.

Davis, Albert B., 511 Cooper street, Camden.
 Davis, Henry H., 569 Benson street, Camden.
 Davis, John B., 205 N. Sixth street, Camden.
 Davis, Nehemiah, 224 Royden street, Camden.
 Davis, Wm. A., 511 Cooper street, Camden.
 Day, Grafton E., Collingswood.
 Dean, Horace B., 513 Penn street, Camden.
 Delap, W. L., Gloucester City.
 Donges, Clarence B., 525 Broadway, Camden.
 Donges, Jno. W., 525 Broadway, Camden.
 Donoho, ———, Merchantville.
 Doran, John G., 207 N. Sixth street, Camden.
 Drumley, Edward D. S., 602 N. Sixth street, Camden.
 Du Bois, W. G., 219 Broadway, Camden.

Dunn, Fred. V., 623 S. Third street, Camden.
 Elliott, W. R., 624 Grant avenue, Collingswood.
 Elwell, Alfred M., 407 Cooper street, Camden.
 Evans, Harry D., 300 Carteret avenue, Camden.
 Fithian, Joel W., 608 Broadway, Camden.
 Flack, Arthur, 738 Washington street, Camden.
 Francis, Carroll H., 429 Market street, Camden.

Gallagher, Thomas J., 2826 Harrison avenue, Camden.
 Garrison, Daniel O., Collingswood.
 Garrison, Howard C., 428 N. Fifth street, Camden.
 Gaubert, Frank, 105 N. 23d street, Camden.
 Godfrey, E. L. B., 400 Linden street, Camden.
 Goldstein, Hyman I., 1441 Broadway, Camden.
 Grace, Harry H., 303 Cooper street, Camden.
 Grier, C. R., 821 S. Fifth street, Camden.
 Griscom, L. E., 604 Broadway, Camden.
 Grumbrecht, Oscar, 615 Market street, Camden.

Hadley, Chas. F., 3320 Federal street, Camden.
 Haines, E. I., 300 Kaighn avenue, Camden.
 Halbelson, Wm. J., 915 S. Fifth street, Camden.
 Haley, Jno. J., Gloucester City.
 Hallinger, E. H., Haddon Heights.
 Hatton, Louis, 427 Market street, Camden.
 Henry, Geo. W., Eighth and Walnut streets, Camden.
 Hirst, Levi B., 592 Federal street, Camden.
 Hoell, Conrad G., 565 Benson street, Camden.
 Hoffman, Ernest L., 3720 Westfield avenue, Camden.
 Hollinshead, Eulab S., 600 Benson street, Camden.
 Hollinshead, Ralph K., 509 Broadway, Camden.
 Horning, F. L., 615 Market street, Camden.
 Hovender, J. I., Atco.
 Howard, E. M., 401 Linden street, Camden.
 Howard, J. E., Haddonfield.
 Howell, Aaron, 111 N. Sixth street, Camden.
 Howell, Mary A., 111 N. Sixth street, Camden.

Hummell, Ernest G., 436 State street, Camden.
 Hurff, Jos. E., Blackwood.
 Ironside, Allen S., 571 Benson street, Camden.
 Izard, R. J., Haddonfield.
 Izard, Wm. H., 411 N. Fourth street, Camden.
 Jackson, Charles H., 1010 Haddon avenue, Camden.
 Jarrett, Harry, Broadway, Cor. Cherry street, Camden.
 Jennings, Chas. H., 15 West Park avenue, Merchantville.
 Jennings, W. B., Haddonfield.
 Johnson, Charles H., 632 Benson street, Camden.
 Jones, Fred'k, Jr., 213 N. 28th street, Camden.
 Jones, Fred'k A., 2901 Westfield avenue, Camden.
 Jones, William S., 301 Penn street, Camden.
 Kain, Wm. W., Fourth, Cor. Pine street, Camden.
 Kelchner, Wm. I., 942 Cooper street, Camden.
 Kensinger, Wm. H., 733 N. 27th street, Camden.
 Kilgore, C. E., Gloucester City.
 Kirk, Grant E., 1801 Broadway, Camden.
 Knight, George B., 3406 Federal street, Camden.
 Knowlton, Wm. W., 620 Benson street, Camden.
 Lawrence, J. D., Merchantville.
 Leavitt, John F., 522 N. Third street, Camden.
 Lee, Thomas, 801 Walnut street, Camden.
 Leeds, Mary, Haddonfield.
 Lefevre, Annette, Blackwood.
 Lippincott, A. Haines, 21 Broadway, Camden.
 Litchfield, P. N., 1123 Kalghn avenue, Camden.
 Long, W. S., Haddonfield.
 Longshore, John B., 510 N. Fourth street, Camden.
 Lyke, Charles H., 700 Broadway, Camden.
 Lyon, L. C., Magnolia.
 MacLennan, Wm., Gloucester City.
 Madden, T. W., Collingswood.
 Mahaffey, Jessie L., Seventh and Elm streets, Camden.
 Marcy, F. W., 539 Penn street, Camden.
 Marcy, John W., Merchantville.
 Markley, Paul N., 511 Cooper street, Camden.
 Martendale, J. W., 2501 Federal street, Camden.

McAllister, Alex., 582 Federal street, Camden.
 McGeorge, Wallace, 521 Broadway, Camden.
 McLennon, J., Gloucester City.
 Mccray, Paul M., 405 Cooper street, Camden.
 Middleton, M. F., 227 Cooper street, Camden.
 Miller, Wm. E., Eighth and Mt. Vernon streets, Camden.
 Mines, M. K., 532 West street, Camden.
 Moore, Frank F., 430 Stevens street, Camden.
 Nicholson, George, 523 Cooper street, Camden.
 Nicholson, Jos. L., 400 Penn street, Camden.
 Osmun, M. W., 611 Broadway, Camden.
 Palm, Howard F., 614 N. Second street, Camden.
 Pancoast, Charles S., 205 Cooper street, Camden.
 Parry, Edward, 946 Penn street, Camden.
 Peacock, Thos., Collingswood.
 Pechlin, Edward C., 300 Penn street, Camden.
 Powell, Wm. B., 702 Market street, Camden.
 Pratt, W. H., 406 N. Sixth street, Camden.
 Quint, Silas H., 633 Market street, Camden.
 Ramsdell, E. S., 521 N. Fourth street, Camden.
 Raughley, Wm., Berlin.
 Redder, A. B., 1135 Kalghn avenue, Camden.
 Robns, David S., 447 Kalghn avenue, Camden.
 Richardson, Emma M., 581 Stevens street, Camden.
 Richardson, James, 701 N. Sixth street, Camden.
 Riddle, H. S., 582 Benson street, Camden.
 Roberts, Joseph E., 401 Broadway, Camden.
 Robinson, Frank, 518 Linden street, Camden.
 Rogers, Edward B., Collingswood.
 Rose, Horace L., 834 Federal street, Camden.
 Ross, Alex. S., 608 Benson street, Camden.
 Ross, L. C., Chews.
 Russell, Edward W., 322 N. Ninth street, Camden.
 Rowntree, Leonard G., 864 N. Seventh street, Camden.
 Saul, Dudley, 439 State street, Camden.

Saunders, O. W., 1700 Broadway, Camden.
 Schellenger, E. A. Y., 429 Cooper street, Camden.
 Shafer, Frederick W., 400 Haddon avenue, Camden.
 Sharp, ———, Berlin.
 Sharp, E. B., 504 Broadway, Camden.
 Sharp, Jennie, 565 Stevens street, Camden.
 Sheldon, E. S., Collingswood.
 Shemeley, Wm. G., 7 Haddon avenue, Camden.
 Sherk, H. H., 2647 Westfield avenue, Camden.
 Sherk, Katherine R., 2647 Westfield avenue, Camden.
 Selber, I. G., Audubon.
 Smith, Charles, 30 N. Thbrd street, Camden.
 Smith, J. Anson, Blackwood.
 Smith, R. Mills, 1633 Broadway, Camden.
 Smith, S. Bryan, 315 Penn street, Camden.
 Smith, W. H., Haddonfield.
 Stem, Frank A., Berlin.
 Stevenson, John R., 23 E. Main street, Haddonfield.
 Straub, Daniel, 326 Cooper street, Camden.
 Taylor, H. G., 305 Cooper street, Camden.
 Taylor, John W., 829 Federal street, Camden.
 Taylor, Rupert J., 501 Haddon avenue, Camden.
 Tullis, Eli R., 403 Stevens street, Camden.
 Van Selver, John E. L., 445 S. Fourth street, Camden.

Ward, Lettie, 706 Broadway, Camden.
 Waters, Geo. W., Haddon Heights.
 Westcott, Wm., Berlin.
 White, J. Orlando, 329 Cooper street, Camden.
 Wildman, Elias, Haddon Heights.
 Williams, F. E., Haddonfield.
 Wingender, W. F., 806 Market street, Camden.
 Woodward, Geo. D., 211 Broadway, Camden.

CAPE MAY COUNTY.

Behrman, I. P., Woodbine.
 Blake, ———, Seaville.
 Cohen, N. A., Wildwood.
 Corson, Allen, Ocean City.
 Dix, J. Morgan, Cape May Court House.
 Douglass, John S., Tuckahoe.
 Downs, I. M., Cape May Court House.

Ewing, Eldridge, Tuckahoe.
 Foote, Theo., Wildwood.
 Garrison, J. E., Ocean City.
 Griscom, I. N., Ocean City.
 Hand, Anna M., Cape May Court House.
 Hughes, Frank, Cape May City.
 Hutchinson, T. C., Ocean City.
 Joffe, Jos., Woodbine.
 Kelchner, ———, Wildwood.
 Lake, Wilson A., Cold Spring.
 Lake, Wilson R., Green Creek.
 Leach, Alonzo L., Cape May City.
 Leaming, Walter S., Cape May City.
 Lummis, M. F., Cape May Court House.
 Mace, ———, Anglesea.
 Marcy, V. M. D., Cape May City.
 Marshall, Randolph, Tuckahoe.
 Mayhew, Samuel D., Wildwood.
 Mccray, Jas., Cape May City.
 Moss, H. J., Woodbine.
 Phillips, Walter, Cape May City.
 Physick, Emilen, Cape May City.
 Reed, Howard, Ocean City.
 Slaughter, James M., Rio Grande.
 Stevens, Albert G., W. Cape May.
 Stevens, A. H., Cape May City.
 Stimus, Howard G., Sea Isle City.
 Swain, Humphry, Goshen.
 Tomlin, H. H., Wildwood.
 Wales, W. R., Cape May City.
 Way, Eugene, Dennisville.
 Way, Julius, Cape May Court House.

CUMBERLAND COUNTY.

Bacon, S. L., Port Norris.
 Bateman, F. M., Cedarville.
 Bennett, Samuel D., Millville.
 Bradford, E. B., Port Norris.
 Buck, R. E., Newfield.
 Butcher, Charles, Heislerville.
 Butcher, Joseph, Heislerville.
 Canwell, Jos. A., Vineland.
 Charlesworth, Irving, 84 N. Laurel street, Bridgeton.
 Charlesworth, R. R., Millville.
 Compton, J. M., Mauricetown.
 Cornwell, Alfred, 311 N. Laurel street, Bridgeton.
 Cornwell, W. Leslie, Bridgeton.
 Corson, E. S., Bridgeton.
 Cunningham, Geo., Vineland.
 Day, S., Port Norris.
 Diamant, E. L., 118 E. Commerce street, Bridgeton.

Dunlap, Mary J., Vineland.
 Elmer, Matthew K., 3 Franklin street, Bridgeton.
 Ewing, S. Eldridge, Leesburg.
 Faulkner, M. R., Vineland.
 Fogg, E. S., 68 N. Pearl street, Bridgeton.
 Foote, Theodore, Vineland.
 Franckle, C. S., Millville.
 Fritz, Herbert, Shiloh.
 Glendon, W. P., Cedarville.
 Good, W. T., 195 E. Commerce street, Bridgeton.
 Gray, C. M., Vineland.
 Greenwood, W. S., Rosenhayn.
 Hollowell, Madeline A., Vineland.
 Halsey, J. S., Vineland.
 Hand, Leslie L., Leesburg.
 Harris, Allan, Greenwich.
 Harris, F. B., Canton.
 Hatch, I. F., Vineland.
 James, G. E., Newport.
 Jones, C. P., Vineland.
 Jones, Ferdinand, Millville.
 Kirchoff, Wm. F., 98 Atlantic street, Bridgeton.
 Kirk, Irwin W., Millville.
 Kump, Reba L., Bridgeton.
 Lloyd, Reba, 25 Bank street, Bridgeton.
 Loper, John C., Bridgeton.
 Lore, Harry E., Fairton.
 Mander, A. J., Millville.
 Mayhew, C. H., Millville.
 Mayhew, S. D., 44 Atlantic street, Bridgeton.
 Miller, H. G., Millville.
 Moore, Jno. H., 114 E. Commerce street, Bridgeton.
 Neal, Chas. B., Millville.
 Oliver, David H., 183 N. Pearl street, Bridgeton.
 Pascalle, E. A., Vineland.
 Patterson, L., Vineland.
 Paulsen, Geo. M., Shiloh.
 Putnam, J. H., Bridgeton.
 Sawyer, Waldo F., Vineland.
 Sewall, M. F., Bridgeton.
 Sheppard, Frank R., Millville.
 Smith, Thos. J., 32 W. Commerce street, Bridgeton.
 Snyder, S. M., Greenwich.
 Spence, Geo., Leesburg.
 Stittes, Elsmore, 122 E. Commerce street, Bridgeton.
 Streets, Jacob G., 188 E. Commerce street, Bridgeton.

Thompson, Jno. R. C., 236 E. Commerce street, Bridgeton.
 Tomlinson, Jos., 104 W. Commerce street, Bridgeton.

Wade, J. W., Millville.
 Wainwright, E. L., Bridgeton.
 Wainwright, F. P., Bridgeton.
 Ware, James E., Bridgeton.
 Ware, J. Vernon, Millville.
 Wettnase, Helen, Vineland.
 Willets, J. Howard, Port Elizabeth.
 Wilson, C. W., Vineland.
 Wilson, H. H., Bridgeton.
 Wilson, S. M., 121 Bank street, Bridgeton.
 Winslow, John H., Vineland.

ESSEX COUNTY.

Abraham, C. F., 122 S. Arlington avenue, East Orange.
 Adams, John K., 475 Main street, Orange.
 Adams, John L., 8 Baldwin street, East Orange.
 Albano, Joseph, 200 Eighth avenue, Newark.
 Alexander, Abraham J., 386 S. Eleventh street, Newark.
 Alexander, W. G., 67 Oakwood avenue, Orange.
 Allen, G. S., Erwin Park, Montclair.
 Anderson, Henry J., 4 Orange Pl., Newark.
 Andrew, Herman B., 176 Summer avenue, Newark.
 Antonio, Tirico, 9 Cloverhill Pl., Montclair.
 Areson, Wm. H., 153 Bellevue avenue, Montclair.
 Arnold, Edward A., 470 Central avenue, East Orange.
 Asher, Morris, 19 Court street, Newark.
 Atkins, R. T., 512 Central avenue, East Orange.
 Ayres, J. S., 21 Avon avenue, Newark.
 Bachmann, Chas., 72 S. Orange avenue, Newark.
 Bachmann, Wm., 342 S. Sixth street, Newark.
 Bagz, Linus W., 92 Elizabeth avenue, Newark.
 Bailey, Wm. B., 15 Hill street, Newark.
 Baker, Charles F., 47 Walnut street, Newark.
 Baker, Walter S., 250 Mulberry street, Newark.
 Baldwin, Ed. H., 77 Clinton avenue, Newark.
 Baldwin, S. H., 473 Clinton avenue, Newark.
 Baldwin, W. E., 117 N. Sixth street, Newark.
 Ball, C. E. A., Valley street, South Orange.

Ballantine, A. D., 152 Washington street, Newark.
 Bancroft, Mabel B., 468 Central avenue, East Orange.
 Banlster, Robert L., 315 Sixth avenue, Newark.
 Banks, Charles W., 298 Main street, East Orange.
 Banks, Winifred D., 298 Main street, East Orange.
 Barber, Pliny W., 169-A Mt. Prospect street, Newark.
 Barkhorn, Henry C., 218 S. Orange avenue, Newark.
 Barnes, ———, Millburn.
 Beams, Walter A., 648 Mt. Prospect avenue, Newark.
 Becker, F. W., 478 Clinton avenue, Newark.
 Becket, Geo. E., 135 Walnut street, East Orange.
 Beggs, W. F., 17 Fulton street, Newark.
 Belling, Christopher C., 109 Clinton avenue, Newark.
 Bell, Arthur W., 222 Market street, Newark.
 Bellini, Giovanni, 251 Eighth avenue, Newark.
 Bellini, Pasquale, 251 Eighth avenue, Newark.
 Belotta, Joseph, 46 Jefferson street, Newark.
 Benedict, Alfred C., 69 Ward Pl., South Orange.
 Bennett, Chas. D., 167 Clinton avenue, Newark.
 Berardinelli, Carmine, 73 Eighth avenue, Newark.
 Bianchi, A. R., 496 Market street, Newark.
 Bingham, Arthur W., East Orange.
 Birdsall, C. A., 196 N. 18th street, East Orange.
 Bishop, ———, Nutley.
 Blackburne, George, 111 Park avenue, Newark.
 Blair, James A., 157 Elizabeth avenue, Newark.
 Blakelock, G. Clinton, 13 N. Grove street, East Orange.
 Blank, Louis N., 74 S. Eighth street, Newark.
 Bleick, Theodore, 340 Waverly avenue, Newark.
 Bleick, W., 526 Clinton avenue, Newark.
 Bleyle, H. C., 15 Walnut street, Newark.
 Blumberg, Louis S., 80 Rose street, Newark.
 Bond, Edwin, Caldwell.
 Bowen, Elizabeth E., 37 Broad street, Newark.
 Bowman, J. Floyd, Irvington.
 Boyer, Arthur A., 54 Harrison street, East Orange.
 Boyle, Thomas, 182 Belleville avenue, Newark.

Bradford, Stella S., 76 Church street, Montclair.
 Bradshaw, Jas. H., 2 High street, Orange.
 Braun, Rudolph, 180 Polk street, Newark.
 Brien, W. M., 111 Main street, Orange.
 Broadnoo, Mary E., 63 Elizabeth avenue, Newark.
 Brown, C. T., 69 Oakwood avenue, Orange.
 Brown, Emil, 65 Liberty street, Newark.
 Brown, Jas. S., 43 S. Fullerton avenue, Montclair.
 Brown, W. W., Montclair.
 Bruce, Ida, Hilton.
 Bruckner, Charles H., 267 S. Eighth street, Newark.
 Buermann, Wm., 352 Belmont avenue, Newark.
 Bumsted, Clarence V. R., 700 Parker street, Newark.
 Bunn, Frank C., 22 Hillyer street, Orange.
 Burne, John J., 558 Central avenue, Newark.
 Burnett, H. K., 15 N. Arlington avenue, East Orange.
 Burnett, Hayes J., 23 Maple avenue, Montclair.
 Burns, E. L., 269 Broad street, Newark.
 Bush, A. C., Verona.
 Buttner, Carl, 67 Clay street, Orange.
 Bvinger, C. W., 50 Washington street, East Orange.
 Campbell, Dundas R., 12 Hill street, Newark.
 Campbell, Herman B., 390 Washington street, Newark.
 Campbell, Wellington, Millburn.
 Carman, F. F., 196 Claremont ave., Montclair.
 Carpenter, Elbridge, 207 Market street, Newark.
 Carpenter, F. S., 281 Belleville avenue, Newark.
 Carter, Helen L., 2 Lombardy street, Newark.
 Caruso, Frank A., 35 Sixth avenue, Newark.
 Case, Levi W., 41 Park street, Montclair.
 Cassini, H. C., 259 Essex avenue, Orange.
 Cater, Douglass A., 59 Harrison street, East Orange.
 Cauffman, Lawrence, 54 Bank street, Newark.
 Celli, Francis, 232 Hunterdon street, Newark.
 Chamberlain, A. R., Maplewood.
 Chandler, H. M., 65 S. Orange avenue, South Orange.
 Chandler, W. J., 65 S. Orange avenue, South Orange.
 Chapman, Robt. W., 835 Bergen street, Newark.

Charloneau, Eugene G., 32 South street, Newark.
 Chatten, J. Franklin, 5 W. Park street, Newark.
 Chiger, Alexander S., 49 Hillside Pl., Newark.
 Christian, Albion C., Sharon avenue, Irvington.
 Christian, M. Osborne, Irvington.
 Church, C. Herbert, 1105 Broad street, Newark.
 Clark, A. M., 812 Highland avenue, Newark.
 Clark, J. Henry, 12 Walnut street, Newark.
 Clark, Patrick J., 132 Littleton avenue, Newark.
 Cobb, Geo. H., South Orange.
 Coe, R., 11 Warren street, Newark.
 Coffey, Michael, 216 Bank street, Newark.
 Coghlan, Jasper W., 1009 Broad street, Newark.
 Cohn, Herman, 281 Mulberry street, Newark.
 Colt, H. L., 277 Mt. Prospect avenue, Newark.
 Coles, J. A., 222 Market street, Newark.
 Collins, James W., 166 S. Eleventh street, Newark.
 Condon, John E., Belleville.
 Conkling, E. D., 224 Belleville avenue, Newark.
 Connelly, F. J., 537 Ferry street, Newark.
 Constantinides, Chas. L., 11 Broad street, Newark.
 Cook, H. F., 368 Sussex avenue, Newark.
 Cook, Mary, 50 Walnut street, Newark.
 Cooke, Wm. H., 10 N. Munn street, East Orange.
 Corana, Gulsepppe, 9 State street, Newark.
 Corrigan, Geo. F., 344 Lafayette street, Newark.
 Corwin, T. W., 20 Central avenue, Newark.
 Cory, Horace C., 224 Broad street, Newark.
 Courtright, E. P., 11 Central street, Newark.
 Coyne, James A., 59 New street, Newark.
 Crawford, David H., 331 Belleville avenue, Newark.
 Cross, Anna, 20 Marshall street, Newark.
 Cummins, Jas. H., 413 Clinton avenue, Newark.
 Cypress, O. E., Washington avenue, Belleville.
 Dacunto, Pellegrino, 131 Seventh avenue, Newark.
 D'Agoste, Oreste, 275 Adams street, Newark.

D'Amico, Anthony, 343 Bank street, Newark.
 Danzls, Max, 46 Mercer street, Newark.
 Davenport, Peter B., 764 S. Orange avenue, Newark.
 Davidson, Louis L., 116 Spruce street, Newark.
 Davis, Lester R., 58 Elizabeth avenue, Newark.
 Davis, Wm. H., 42 Arlington avenue, East Orange.
 Dennis, John, 287 Belleville avenue, Newark.
 Dennis, Laban, 49 Ridge street, Orange.
 De Vansney, Winfield S., 102 Central avenue, Newark.
 Devlin, Francis, 68 Congress street, Newark.
 Devlin, Hugh J., 72 Thomas street, Newark.
 Dias, Jos. L., 12 Central avenue, Newark.
 Dieffenbach, R. G. P., 185 Hunterdon street, Newark.
 Dieffenbach, Richard H., 185 Hunterdon street, Newark.
 Di Matteo, Francis R., 25 Brelntnall Pl., Newark.
 Dirivaux, John A., 118 Newton street, Newark.
 Disbrow, Wm. S., 151 Orchard street, Newark.
 Dodge, Walter, 32 Cleveland street, Newark.
 D'Oench, F. E., Montclair.
 Donnelly, R. J., 26 Wallace Pl., Newark.
 Dougherty, A. C., 158 Washington street, Newark.
 Dougherty, Arthur, 27 Warren street, Newark.
 Dowling, C. E., 169 Day street, Orange.
 Duncker, Chas. H., 15 Court street, Newark.
 Duncker, F. W., 15 Court street, Newark.
 Duryee, Jno. L., 436 High street, Newark.
 Eagleton, Wells P., 15 Lombardy street, Newark.
 Easton, Elwood M., 146 Washington street, Newark.
 Eckardt, R. C., 18 S. Arlington avenue, East Orange.
 Edwards, David, Livingston.
 Edwards, Philip H., 113 Summit street, Newark.
 Edwards, Sarah M., 207 Sommer avenue, Newark.
 Egge, Julius K., 439 Washington street, Newark.
 Elliott, Daniel, 84 Washington street, Newark.
 Emerson, Linn, Orange.
 Emil, Hyman S., 173 Spruce street, Newark.
 Emory, George B., 662 High street, Newark.

English, J. R., 800 Clinton avenue, Newark.
 English, James, Clinton avenue, Irvington.
 Epler, Don A., 82 Congress street, Newark.
 Epstein, H. B., 465 High street, Newark.
 Eriker, Eugene W., 455 Orange street, Newark.
 Farkes, M., 266 Watchung avenue, West Orange.
 Federman, Philip H., 145 S. Orange avenue, Newark.
 Feldman, Jacob F., 582 Market street, Newark.
 Feldman, Max, 51 Thirteenth avenue, Newark.
 Ferrer, J., 94 N. Parkway, East Orange.
 Ferris, S., 309 S. Ninth street, Newark.
 Fewsmith, Jos., 47 Central avenue, Newark.
 Fewsmith, Joseph L., 76 Central avenue, Newark.
 Finkelstein, Abraham, 262 High street, Newark.
 Fischer, Armin, 42 Sixteenth avenue, Newark.
 Fisk, E. L., Montclair.
 Fitzgerald, Paul, 178 N. Seventh street, Newark.
 Fitzpatrick, Edward F., 574 Warren street, Newark.
 Flachs, Adolph, 30 Courtland street, Newark.
 Flower, M. A., 43 Montgomery street, Newark.
 Folley, Etta, 562 Warren street, Newark.
 Foster, H. W., 10 The Crescent, Montclair.
 Foster, W. Story, 147 Summer avenue, Newark.
 Francis, Richard P., 12 Plymouth street, Montclair.
 Frazer, Samuel H., 19 W. Park street, Newark.
 Fredericks, G., 349 Camden street, Newark.
 Freeman, Richard D., South Orange.
 Freese, J. A., 436 Central avenue, East Orange.
 Frey, Albert, 317 S. Orange avenue, Newark.
 Friess, Fred'k, 19 Elm street, Newark.
 Froehlich, J. C., 74 Ingraham Pl., Newark.
 Gabriel, Chas., 407 Littleton avenue, Newark.
 Gale, Geo. B., 784 Broad street, Newark.
 Gale, Wm. V., 259 Roseville avenue, Newark.
 Gantz, Emma O., 28 Park avenue, East Orange.

Garrett, W. D., 473 Main street, East Orange.
 Gauch, Wm., 255 High street, Newark.
 Geddes, Isabel M., 16 James street, Newark.
 Gerbert, H. P., 329 Main street, Orange.
 Giuliani, Robert, 269 High street, Newark.
 Givens, Bradford W., 12 N. Grove street, East Orange.
 Glatzmayer, H. A., 204 Fairmont avenue, Newark.
 Gluckman, Isaac E., 442 High street, Newark.
 Goodwin, Wm. M., 66 Congress street, Newark.
 Gould, E. J. T., 78 Carlton street, East Orange.
 Granberry, D. Webb, 48 Harrison street, East Orange.
 Granger, Wm. R., 27 Wallace Place, Newark.
 Graves, Anna M., 121 Mt. Prospect avenue, Newark.
 Graves, Wm. B., East Orange.
 Gray, Thos. N., East Orange.
 Greenbaum, S., 135 W. Kinney street, Newark.
 Greenberg, Samuel, 67 Stratford Pl., Newark.
 Greenfield, B. H., 205 S. Orange avenue, Newark.
 Griffiths, C. B., 257 Clinton avenue, Newark.
 Groves, C. A., 303 Main street, East Orange.
 Guenther, Emil E., 159 W. Kinney street, Newark.
 Gurtner, T. E., 126 Court street, Newark.
 Hagar, Jno. F., 88 Ferry street, Newark.
 Hagerty, John F., 30 Wallace Pl., Newark.
 Hagney, F. W., 69 Pennsylvania avenue, Newark.
 Hahn, George H., 550 Bergen street, Newark.
 Halperin, Clement J., 489 High street, Newark.
 Haines, Eleanor, 936 Broad street, Newark.
 Halsey, L. W., 69 Church street, Montclair.
 Haneman, F. T., 219 Burnet street, East Orange.
 Hannan, Jas. T., 11 The Crescent, Montclair.
 Harden, Albert S., 540 Warren street, Newark.
 Harrington, W. L., 180 Central avenue, East Orange.
 Harris, H. B., 39 Cleveland street, Orange.
 Harris, H. C., Glen Ridge.
 Harris, Leon, 504 Valley Road, West Orange.
 Harrison, Wm. M., Montclair.

Hart, H. M., 300 Mt. Prospect avenue, Newark.
 Harvey, Thomas W., 463 Main street, Orange.
 Hatfield, Hazel M., 55 Elizabeth avenue, Newark.
 Hauck, W. J., 110 Bloomfield avenue, Newark.
 Haussling, Francis R., 661 High street, Newark.
 Haux, Hans, 393 Springfield avenue, Newark.
 Hawkes, E. Zeb, 14 Fulton street, Newark.
 Hawley, S. S., 1 South street, Newark.
 Hayden, Jos. H., 395 Sussex avenue, Newark.
 Heath, Louanna, 19 N. Sixth street, Newark.
 Heberton, Wm. W., South Orange.
 Heddon, J. H., 16 Baldwin street, Newark.
 Hemsath, John, 36 Spruce street, Newark.
 Herold, H. C., 1012 Broad street, Newark.
 Hewson, James S., 431 Avon avenue, Newark.
 Hexamer, Fred., 118 Wickliffe street, Newark.
 Hickok, G. B., 66 Lenox avenue, East Orange.
 Hicks, Wm. H., 273 Central avenue, Newark.
 Hill, Charles F., 51 Hamburg Pl., Newark.
 Hinckley, L. S., 182 Clinton avenue, Newark.
 Hinds, Harriet C., 76 N. Grove street, East Orange.
 Hirschberg, Samuel, 145 South Orange street, Newark.
 Hitchcock, U. E., 55 Belleville avenue, Newark.
 Hoeler, Wm. F., 383 S. Sixth street, Newark.
 Hoffman, Geo. P., 277 Littleton avenue, Newark.
 Hoffman, Gustave P., 235 Fairmount avenue, Newark.
 Hoffman, Jas., 518 Clinton avenue, Newark.
 Holden, Edgar, 617 Mt. Prospect avenue, Newark.
 Holland, J. A., Montclair.
 Holler, Henry B., 234 Montclair avenue, Newark.
 Hollister, L. E., 138 Clinton avenue, Newark.
 Holmes, Geo. J., 17 Elizabeth avenue, Newark.
 Hood, Philip J., 475 Clinton avenue, Newark.
 Hooper, Thomas B., 305 Orange street, Newark.
 Horsford, Frederick C., 277 Belleville avenue, Newark.
 Houck, Wm. J., 110 Bloomfield avenue, Newark.

Hubbard, F. E., Montclair.
 Huberman, John, 141 W. Kinney street, Newark.
 Hughes, Dr., Bloomfield.
 Hunt, Ralph H., East Orange.
 Husbands, Samuel C., 123 Bank street, Newark.
 Hussler, Siegfried, 775 Clinton avenue, Newark.
 III, Chas. L., 188 Clinton avenue, Newark.
 II, Edgar A., 392 Clinton avenue, Newark.
 III, Edw. J., 1002 Broad street, Newark.
 Ives, E. D., Montclair.
 Jackson, Albert, Nutley.
 Jackson, George D., 938 Broad street, Newark.
 Jacobson, F. C., 969 Broad street, Newark.
 Jedel, M., 362 Warren street, Newark.
 Johnson, J. C., 10 Chestnut street, Newark.
 Johnson, Wm. M., 1 Richmond street, Newark.
 Judson, Wm. A., 211 Mt. Prospect avenue, Newark.
 Kaplan, Benjamin E., 771 Bergen street, Newark.
 Kaufhold, Frank, 589 Clinton avenue, Newark.
 Kaufman, Emil, 63 New street, Newark.
 Kaufman, Ignatz, 194 Spruce street, Newark.
 Keeney, Edwell B., 315 Clifton avenue, Newark.
 Kelm, A. Madison, 7 Roseville avenue, Newark.
 Kelm, W. F., 7 Roseville avenue, Newark.
 Keller, Sinney C., 166 Washington street, Newark.
 Kelly, J. W., 178 Berger street, Newark.
 Kelly, Thomas J., 457 Orange street, Newark.
 Kent, Geo. R., 39 Eighth avenue, Newark.
 Kerns, Francis J., 17 Fairmount avenue, Newark.
 Kessler, Henry B., 359 S. Sixth street, Newark.
 Kestner, Mark, 44 Mercer street, Newark.
 Kirkman, Leroy G., 256 Orange street, Newark.
 Klitchen, J. M. W., 94 Prospect street, East Orange.
 Klein, Harry, 465 S. Seventh street, Newark.
 Klein, Ignatz, 471 Springfield avenue, Newark.
 Klein, Maurice I., 127 Wickliffe street, Newark.
 Knowles, F. E., South Orange.

Koch, Louis A., 16 Chestnut street, Newark.
 Korneman, Henry A., 251 Springfield avenue, Newark.
 Kraemer, Chas. F., 29 Thirteenth avenue, Newark.
 Kraker, 236 Broad street, Newark.
 Krause, Henry G., 317 S. Orange avenue, Newark.
 Kriebbaum, J. W., 207 Bellevue avenue, Montclair.
 Kriebbaum, Philip E., Montclair.
 Kriebbaum, Theodora, Montclair.
 Kupperman, Isaac, 191 Spruce street, Newark.
 Laine, Edwin R., Caldwell.
 Lamont, Geo. F., 202 Clinton avenue, Newark.
 Lane, Frank B., 528 Main street, East Orange.
 Lane, H. R., Caldwell.
 Langdon, R., Nutley.
 Lautervasser, Charles, 252 Littleton avenue, Newark.
 Lawrence, Minnie J., 146 Washington street, Newark.
 Lee, Stephen J., 29 Halsted street, East Orange.
 Lehlbach, Chas., 22 Breintnall Place, Newark.
 Lehmacher, Frank, Jr., 166 Springfield avenue, Newark.
 Lehmacher, Franz, 166 Springfield avenue, Newark.
 Levy, Julius, 191 Littleton avenue, Newark.
 Lewis, G. Rae, 481 Summer avenue, Newark.
 Leyenberger, Sam'l B. W., 98 Third avenue, Newark.
 Lillibridge, Freeman C., 12 School street, Newark.
 Lincoln, J. O., Montclair.
 Lippe, C. A. F., 250 Littleton avenue, Newark.
 Lippincott, J. D., 207 Summer avenue, Newark.
 Lockwood, Frank W., East Orange.
 Loeb, Alfred A., 378 Lafayette street, Newark.
 Long, Herbert W., 102 Jefferson street, Newark.
 Loux, Henry A., 479 S. Eleventh street, Newark.
 Love, L. C., 16 Church street, Montclair.
 Lowerie, Thos. W., 30 Hill street, Newark.
 Lowery, Jas. H., 79 Congress street, Newark.
 Lowits, Otto, 26 Thirteenth avenue, Newark.
 Lowy, Otto, 549 High street, Newark.
 Luongo, F., 7 Huribert street, Orange.
 Luther, Carlsta, South Orange.
 Lyle, A. F., 203 S. Sixth street, Newark.

Lyons, Ernest M., 276 Broad street, Newark.
 Maas, Max A., 329 High street, Newark.
 Mabey, J. C., 242 Claremont avenue, Montclair.
 MacBride, Samuel A., 306 Lafayette street, Newark.
 MacDonald, J. Jr., 134 Greenwood avenue, East Orange.
 Madison, Elizabeth, 449 High street, Newark.
 Maghee, Jas. M., Orange Valley.
 Malatesta, J. M., 176 Mt. Prospect avenue, Newark.
 Mancusi-Ungaro, Ludovico, 86 Mt. Prospect avenue, Newark.
 Mandeville, Chas. D., 673 Broad street, Newark.
 Mandeville, Fred'k A., 945 Broad street, Newark.
 Marks, Edward W., 442 High street, Newark.
 Martin, Peter W., 190 Thirteenth avenue, Newark.
 Martin, Susan F., 404 Avon avenue, Newark.
 Martine, Frank L., 256 Clifton avenue, Newark.
 Martinetti, Carlo, 338 Central avenue, Orange.
 Martland, Harrison S., 1138 Broad street, Newark.
 Martland, Wm. H., 1138 Broad street, Newark.
 Matheke, Otto G., 5 Fourth street, Newark.
 Matthews, H. E., 12 Hillside avenue, Orange.
 Matturri, Nicola M., 23 Mt. Prospect avenue, Newark.
 Mautner, Emil, 237 Fairmount avenue, Newark.
 Maxfield, J. Harris, 4 Myrtle avenue, Newark.
 McBride, Hesser G., 248 Mulberry street, Newark.
 McCabe, Thomas S., 234 Lafayette street, Newark.
 McCardie, D. B., 93 Fourth avenue, Newark.
 McCormick, H. L., 14 E. Kinney street, Newark.
 McCormick, Henry D., Verona.
 McCroskery, J. H., 600 Main street, East Orange.
 McDonald, Dr., Upper Montclair.
 McEwen, Floy, 299 Belleville avenue, Newark.
 McKee, Mary J., 450 High street, Newark.
 McKenzie, Wm. H., 942 Broad street, Newark.
 Mead, S. R., 2 Lombardy street, Newark.
 Meeker, F. B., 63 First street, Newark.
 Meeker, I. A., 581 Valley R'd, Montclair.

- Meeker, John L., 41 Avon avenue, Newark.
- Megaro, P., 320 High street, Newark.
- Menk, Paul E., 29 Thirteenth avenue, Newark.
- Merrells, Elizabeth, 17 Plymouth street, Montclair.
- Mercer, Archibald, 31 Washington street, Newark.
- Merrill, Chas. F., 297 Central avenue, Newark.
- Merriss, Edward M., 15 Williams street, East Orange.
- Meyer, Harry, 132 Springfield avenue, Newark.
- Miller, E., 459 High street, Newark.
- Minard, E. Leroy, 197 N. Nineteenth street, East Orange.
- Mitchell, Augustus J., 74 South street, Newark.
- Mitchell, F. B., 477 Main street, Orange.
- Mitchell, Winthrop D., 23 S. Grove street, East Orange.
- Mockridge, Oscar A., 240 Belleville avenue, Newark.
- Moffat, Edgar V., 476 Main street, Orange.
- Mohrbacher, Jno. J., 401 Bergen street, Newark.
- Moore, John D., Bloomfield.
- Morehouse, J. T., 2 Freeman street, Orange.
- Morgan, Brown, Benson street, Bloomfield.
- Morris, Clement, 75 Wash avenue, Newark.
- Morris, W. B., 117 Irvington avenue, South Orange.
- Morrison, Caldwell, 399 Seventh avenue, Newark.
- Morrison, J. B., 97 Halsey street, Newark.
- Motzenbecker, Peter F., 680 High street, Newark.
- Motzenbecker, Wm. J., 49 Pennsylvania avenue, Newark.
- Moulton, Chas. D., 142 Greenwood avenue, East Orange.
- Mount, W. B., 76 Watchung avenue, Montclair.
- Mueller, G. W., 61 Springfield avenue, Newark.
- Mulholland, J. K., 31 Franklin street, Newark.
- Muller, Joseph H., 867 S. Thirteenth street, Newark.
- Mulliken, Louis C., 312 Belleville avenue, Newark.
- Murray, E. W., 91 Washington avenue, Newark.
- Muta, F. A., West Orange.
- Nadler, Fred. C., 31 Green street, Newark.
- Nash, Albert B., 10 South Thirteenth street, Newark.
- Nash, Wm. G., 271 Clinton avenue, Newark.
- Near, Clifford R., East Orange.
- Newman, Emanuel D., 81 New street, Newark.
- Newman, James F., 98 Milford avenue, Newark.
- Newton, Anna B., 137 S. Orange avenue, South Orange.
- Newton, Richard C., 42 Church street, Montclair.
- Nivison, Anna, 5 North Eleventh street, Newark.
- Noble, W. C., 19 N. Fullerton avenue, Montclair.
- Noite, H. W., 255 Mulberry street, Newark.
- O'Brien, D. J., 143 Centre street, Orange.
- O'Conner, B., 7 Fairfield street, Montclair.
- O'Crowley, Clarence R., 12 Lombardy street, Newark.
- Oertel, Henry B., 272 Littleton avenue, Newark.
- O'Gorman, Geo., 986 Broad street, Newark.
- O'Neill, Charles L., 297 Central avenue, Newark.
- Opdike, Ralph, Montclair.
- O'Reilly, Myles, 323 S. Orange avenue, Newark.
- O'Reilly, Patrick M., 208 Littleton avenue, Newark.
- Ortal, Henry P., 272 Littleton avenue, Newark.
- Orton, Henry B., 51 William street, East Orange.
- Ost, Henry, 471 Springfield avenue, Newark.
- Paczkowski, T., Bloomfield.
- Palmer, G. Howard, 11 Wakeman avenue, Newark.
- Parker, John E., 2 Girard avenue, East Orange.
- Parker, S. H., 72 Fourth avenue, East Orange.
- Parsonnet, V., 134 W. Kinney street, Newark.
- Pascall, Thomas M., 677 Summer street, Newark.
- Patton, J. A., 161 Valley R'd, Montclair.
- Paul, Fred. M., 562 High street, Newark.
- Peck, Edw. E., Caldwell.
- Pelonze, Percy S., 671 Springfield avenue, Newark.
- Pennington, W., Irvington.
- Petry, W., 325 S. Orange avenue, Newark.
- Phelan, Edward, 18 South street, Newark.
- Philhower, Geo. B., Nutley.
- Pinneo, Frank W., 199 Garside street, Newark.
- Pitt, Jessie B., 207 Broad street, Bloomfield.
- Polaner, George, 87 Pacific avenue, Newark.
- Polevski, Jacob, 148 W. Kinney street, Newark.
- Poor, D. W., 27 Ridge street, Orange.
- Porter, Katherine, 149 William street, Orange.
- Porzer, O., Bloomfield.
- Porzer, Oscar, 91 S. Ninth street, Newark.
- Post, Dr., Bloomfield.
- Porter, G. E., 87 Halsey street, Newark.
- Potter, Palmer A., East Orange.
- Potter, Robt. C., 25 Fulton street, Newark.
- Povey, Harry C., 39 Mott street, Newark.
- Preston, Perry B., German Hospital, Newark.
- Price, N. G., 62 Boston street, Newark.
- Proctor, Jesse E., 95 Boyden street, Newark.
- Pulsford, H. A., 475 Main street, Orange.
- Quinby, Wm. O. G., 14 James street, Newark.
- Rachlin, Israel J., 396 Clinton avenue, Newark.
- Ramos, Nicholas I., 188 Market street, Newark.
- Randall, C. H., 50 Third avenue, Newark.
- Ranson, Briscoe B., Jr., Maplewood.
- Read, Joshua W., 82 Park Place, Newark.
- Reeves, A. R., 25 Halsted street, East Orange.
- Relch, Louis, 176 W. Kinney street, Newark.
- Reissman, Erwin, 1 Poinler street, Newark.
- Rettig, Isadore, 229 Hunterdon street, Newark.
- Ribbans, R. C., 63 Central avenue, Newark.
- Richards, G. H., 11 Cleveland street, Newark.
- Richman, E. M., 246 Mulberry street, Newark.
- Record, Philippe, 268 Bank street, Newark.
- Riggins, Edwin N., 225 Midland avenue, East Orange.
- Ringland, Dr., Bloomfield.
- Roberts, Frank A., 5 Gillette Pl., Newark.
- Robertson, Sam'l E., 21 Walnut street, Newark.
- Robinson, E. A., 285 Mulberry street, Newark.
- Robinson, Louis H., 587 Bergen street, Newark.
- Robinson, Manning N., 159 Elm street, Newark.
- Robinson, Wm. D., 12 S. Grove street, East Orange.
- Rodemann, W. F. L., 492 Central avenue, Newark.
- Roden, Hugh P., 345 Washington street, Newark.
- Rodgers, G. A., 1 Wallace street, Newark.
- Roeber, Wm. J., 104 Spruce street, Newark.
- Rogers, H., 58 Reynolds Ter., Orange.
- Rogers, R. H., 40 Ninth avenue, Newark.
- Rohn, John P., 217 Chadwick avenue, Newark.
- Rose, W. Walter, 13 Gould avenue, Newark.
- Rosenwasser, Charles A., 214 S. Sixth street, Newark.
- Rostow, Clarence, 655 High street, Newark.
- Roth, Oswald H., 210 Littleton avenue, Newark.
- Roblnow, Saul, 109 Court street, Newark.
- Rudloff, Wm., 343 W. Kinney street, Newark.
- Runyon, Milford, South Orange.
- Russell, A. B., 54 William street, East Orange.
- Satchwell, Harry H., 99 Frederick street, Newark.
- Satterer, Wm., 706 S. Orange avenue, Vailsburg.
- Schaaf, E. O., 217 S. Orange avenue, Newark.
- Schaefer, Eugene, 697 Springfield avenue, Newark.
- Scheppach, H. A., 229 S. Orange avenue, Newark.
- Schilling, W., 585 Springfield avenue, Newark.
- Schneider, C. A., 664 Clinton avenue, Newark.
- Schneider, Louis, 684 Springfield avenue, Newark.
- Schopfer, Wm. E., 43 Read street, Newark.
- Schureman, Chas. A., 22 Hill street, Newark.
- Schwartz, Emanuel, 361 High street, Newark.
- Scott, R., Hunter, 17 Gould avenue, Newark.
- Seaborn, G. F., 600 Main street, East Orange.
- Sealey, Edward, 369 Washington street, Newark.
- Selbert, Edgar, 579 Main street, Orange.
- Seldier, Wm. F., 21 Ferry street, Newark.
- Seldmann, Marcus, 580 High street, Newark.
- Selvasse, Carlo, 86 Jefferson street, Newark.
- Selvasse, Charles E., 10 Osborn Ter., Newark.
- Seward, J. L., 414 Main street, Orange.
- Sharler, Sumner, 261 Clinton avenue, Newark.

Shaul, Fred G., Bloomfield.
 Sheehan, Jos. E., 108 Essex avenue, Orange.
 Shelton, Chas. H., 70 Grove street, Montclair.
 Sherman, E. S., 191 Summer avenue, Newark.
 Sherman, Elbert S., 20 Central avenue, Newark.
 Simmons, Dr., Irvington.
 Simmons, M. H., 225 Cleveland avenue, Orange.
 Slegbt, B. H. B., 31 Lincoln Park, Newark.
 Smalley, S. D., 224 Broad street, Newark.
 Smith, A. E., 123 Oakwood avenue, Orange.
 Smith, Anna L., 50 N. Fullerton avenue, Montclair.
 Smith, Charles, 67 Thomas street, Newark.
 Smith, Fred R., 9 Linden street, Newark.
 Smith, Howard S., 149 Polk street, Newark.
 Smith, Joseph, 325 Thirteenth avenue, Newark.
 Smith, L. H., 103 Frederick street, Newark.
 Smith, Leonard H., 6 N. Munn street, East Orange.
 Soden, G. A., 462 Central avenue, East Orange.
 Sondern, P. F., Montclair.
 Spottiswoode, Sarah C., 64 Cleveland street, Orange.
 Sprague, Edward W., 108 Washington street, Newark.
 Staehlin, Edward, 15 Lincoln Park, Newark.
 Stage, J. S., 601 Clinton avenue, Newark.
 Stahl, Alfred, 565 Bergen street, Newark.
 Steiner, Edwin, 577 High street, Newark.
 Sfern, David, 547 Bergen street, Newark.
 Stillwell, A. J., 57 Oakwood avenue, Orange.
 Stockton, Frank O., 22 Central avenue, Newark.
 Stout, W. H. V., 94 William street, East Orange.
 Sturchio, Eugenio, 141 Seventh avenue, Newark.
 Sutphen, C. E., 185 Roseville avenue, Newark.
 Sutphen, Edward B., 907 Broad street, Newark.
 Sutphen, T. Y., 909 Broad street, Newark.
 Sutphin, Jos. S., 193 Orange street, Newark.
 Sutton, Dr., 133 Day street, Orange.
 Synnott, Mortin J., 26 S. Fullerton avenue, Montclair.

Tanenbaum, Frank, 130 Wickliffe street, Newark.
 Tarbell, H. A., 28½ Thomas street, Newark.
 Taylor, Edwin, 10 S. Arlington avenue, East Orange.
 Taylor, Y. Herbert, Maplewood.
 Taylor, H. L., 31 Clinton avenue, Montclair.
 Teeter, Chas. E., 418 Orange street, Newark.
 Teimer, Theodore, 184 Clinton avenue, Newark.
 Tetreault, Frank J., 3 Centre street, Orange.
 Thompson, Dr., Bloomfield.
 Thompson, Arthur F., 169 Main street, East Orange.
 Tirico, A., Montclair.
 Titus, Chas. W., 126 N. Seventh street, Newark.
 Tommasi, Charles F., 151 Union street, Newark.
 Towle, Henry A., 16 Halsey street, Newark.
 Trainor, Jas. H., 131 Elm street, Newark.
 Tutschutte, E., 178 Broad street, Newark.
 Twinch, Sidney A., 598 Broad street, Newark.
 Twitchell, A. B., 224 S. Seventh street, Newark.
 Underwood, C. F., 259 Mt. Prospect avenue, Newark.
 Vall, Herbert B., Belleville.
 Vanderhoff, Irving M., 50 S. Tenth street, Newark.
 Van Dwyne, S. Elizabeth, 274 Belleville avenue, Newark.
 Van Gleson, Wm. H., Bloomfield.
 Van Riper, A. H., Nutley.
 Van Wagener, G. A., 750 Broad street, Newark.
 Vinton, Maria M., 15 Halsted Pl., East Orange.
 Voebel, B. H., 1008 S. Orange avenue, Vailsburg.
 Voorhees, Florence A., 18 Elizabeth avenue, Newark.
 Waite, Geo. M., 569 High street, Newark.
 Wakeley, W. A., 414 Main street, Orange.
 Walker, R. E., Montclair.
 Wallace, Henry, Glen Ridge.
 Wallhauser, M. F. J., 47 New street, Newark.
 Ward, Aaron C., 325 Clinton avenue, Newark.
 Ward, Gertrude P., Bloomfield.
 Ward, Wm. J., 438 Warren street, Newark.
 Ward, Wm. R., Lyons Farms.
 Ward, Wm. R., 112 Chancellor avenue, Newark.

Warner, H. H. A., 400 Main street, Orange.
 Warren, G. L., 77 Houston street, Newark.
 Warren, W. H., 863 Mt. Prospect avenue, Newark.
 Washington, Walter S., 2 Lombardy street, Newark.
 Washington, Wm. H., 23 Orleans street, Newark.
 Webner, Fred. C., 96 Clinton avenue, Newark.
 Weeks, G. M., 900 De Graw avenue, Newark.
 Wegman, Max, 5 Wall street, Newark.
 Welmer, Alfred, 366 Washington street, Newark.
 Weinmann, Max H., 223 S. Orange avenue, Newark.
 Weiss, Lazar, 42 Mercer street, Newark.
 Weiss, Louis, 516 Springfield avenue, Newark.
 Weller, A., 473 Main street, Orange.
 Welsman, G. O., 205 Mt. Prospect avenue, Newark.
 Wendel, A. V., 205 Littleton avenue, Newark.
 Wendelbon, Lars T., 558 S. Tenth street, Newark.
 West, Eugene G., 14 Cleveland street, Orange.
 Whalen, E. P., Nutley.
 Wherry, E. G., 325 Clinton avenue, Newark.
 White, J. L., 15 Evergreen Pl., East Orange.
 White, Wm. H., Bloomfield.
 Whitehorn, H. B., Verona.
 Whitehack, M. R., 19 Bathgate Place, Newark.
 Wickman, Albert, 410 Bergen street, Newark.
 Widman, A., 611 Clinton avenue, Newark.
 Widmer, Henry, 517 Clinton avenue, Newark.
 Wilkes, Arthur C., Irvington.
 Wilson, Jas. W., 149 Union street, Newark.
 Wilson, W. S., 96 Montclair avenue, Newark.
 Wilson, W. W., 28 The Crescent, Montclair.
 Wlans, Jos. C., Belleville.
 Wintsch, C. H., 188 Fairmount avenue, Newark.
 Wismar, William F., 108 Belmont avenue, Newark.
 Wissotzky, Mark, 142 Ferry street, Newark.
 Witt, George B., 10 Richmond street, Newark.
 Witte, Frederick C., 557 Clinton avenue, Newark.
 Wolfe, Dr., Bloomfield.
 Wolfe, W. W., 383 Mulberry street, Newark.

Wolfs, Jean F., 915 S. Sixteenth street, Newark.
 Woodhouse, Alfred, 835 Clinton avenue, Newark.
 Woodruff, Franklin C., 11 Burnett street, Newark.
 Woolf, Bernard H., 40 Waverly avenue, Newark.
 Woolman, Henry M., 27 Thirteenth avenue, Newark.
 Worl, E. E., 271 High street, Newark.
 Wormley, James, 19 Marshall street, Newark.
 Wort, Fred. J., 102 Clinton avenue, Newark.
 Wrensch, Alex. B., 79 Valley R'd, Montclair.
 Wrightson, Jas. T., 25 Walnut street, Newark.
 Yadowsky, Emanuel, 50 Chariton street, Newark.
 Young, Chas., 23 East Kinney street, Newark.
 Young, J. H., North Fullerton avenue, Montclair.
 Young, John L., 178 Washington avenue, Newark.
 Young, Warren H., 43 North Willow street, Montclair.
 Zehnder, A. Charles, 108 Fairmount avenue, Newark.

GLOUCESTER COUNTY.

Ashcraft, John H., Mullica Hill.
 Ashcraft, Samuel, Mullica Hill.
 Black, A. B., Paulsboro.
 Black, Emanuel S., Williamstown.
 Brewer, Wm., Woodbury.
 Buck, Ralph E., Newfield.
 Burk, Chas. M., Clarksboro.
 Buzby, Benj. F., Swedesboro.
 Campbell, Duncan, Woodbury.
 Carr, H. H., Mullica Hill.
 Chalfonte, Dr., Mullica Hill.
 Cheeseman, P., Swedesboro.
 Clark, H. H., Woodbury.
 Clements, Ruth, National Park.
 De Groot, Vernon E., Swedesboro.
 Diverly, H. B., Woodbury.
 Duffield, Elias M., Glassboro.
 Edwards, J. G., Williamstown.
 Fooder, H., Williamstown.
 Glover, W. A., Woodbury.
 Grimshaw, O., Swedesboro.
 Haines, Chas. T., Clarksboro.
 Halsey, L. N., Williamstown.
 Harley, H. L., Williamstown.
 Harvey, C. W., Wenonah.

Heritage, Charles, Glassboro.
Heritage, J. Down, Glassboro.
Hillegass, E. Z., Mantua.
Hollnshed, Ralph K., Westville.
Hunter, Jas., Jr., Westville.

Iszard, Howard, Glassboro.
Iszard, Jacob, Glassboro.

Laws, Geo. C., Paulsboro.
Luffberry, M. J., Glassboro.
Lummis, M. F., Pitman.

Oliphant, E. T., Bridgeport.

Parker, T. E., Woodbury.
Pedrick, C. D., Glassboro.
Phillips, C. B., Pitman.
Porch, Alfred, Clayton.
Pounds, Wm. H., Paulsboro.

Read, Chas., Pitman.
Reading, Geo. Evans, Woodbury.
Reeves, R. H., Paulsboro.

Sinexson, L., Paulsboro.
Slaughter, L. N., Pitman Grove.
Smith, A. A., Malaga.
Stilwagon, F. E., Bridgeport.
Stokes, Lydia W., Woodbury.
Stout, Harry A., Wenonah.
Stratton, Woodbury.

Trenchard, Albert, Glassboro.

Underwood, J. Harris, Woodbury.

Wilson, H. A., Woodbury.

HUDSON COUNTY.

Abbott, H. D., 24 E. Thirty-third street, Bayonne.
Ackerman, Edward, 242 Grove street, Jersey City.
Ackerman, A. E., 477 Bergen avenue, Jersey City.
Adam, Clovis, 53 South street, Jersey City.
Adams, Samuel, 2845 Hudson Boul., Jersey City.
Adams, Thos. H., 57 Congress street, Jersey City.
Adler, Joseph, 538 Avenue D, Bayonne.
Alfieri, Pasquale, 601 Monroe street, Hoboken.
Allen, I. L., 521 Fallsade avenue, West Hoboken.
Allen, Ulamor, 401 Ogden avenue, Jersey City.
Allers, Henry, Harrison.
Amasto, Basilio, 109 Brunswick street, Jersey City.
Ames, Charles M., 800 Grand street, Jersey City.
Ames, E. H., 24 Madison avenue, Jersey City.

Andrews, Bromwell A., 205 Monticello avenue, Jersey City.
Arlitt, W. J., 808 Hudson street, Hoboken.
Armstrong, E. C., Town of Union.
Atwell, D. R., 607 Hudson street, Hoboken.
Audi, A., 221 Central avenue, West Hoboken.
Axford, Homer W., Bayonne.

Baechler, J., 437 Sixteenth street, West Hoboken.
Baker, E. Mills, 103 Wayne street, Hoboken.
Bakelst, H. S., 123 Gifford avenue, Jersey City.
Ball, Chas. H., 1010 Gardner street, Hoboken.
Barlow, F. C., 646 Jersey avenue, Jersey City.
Baumann, J., 126 Mercer street, Jersey City.
Baumann, Louis, 250 Fifth street, Jersey City.
Beckwith, L., 138 Mercer street, Jersey City.
Beeman, R. H., 461½ Jersey avenue, Jersey City.
Bell, C. E., 546 Summit avenue, Jersey City.
Benn, Hamilton, 621 Montgomery street, Jersey City.
Benson, James J., West New York.
Bibham, W. S., 1010 Washington street, Hoboken.
Bidwell, H. G., 1 Madison avenue, Jersey City.
Blais, Albert G., 396 Bergen avenue, Jersey City.
Bjorn, Christ, 315 Pacific avenue, Jersey City.
Blanchard, O. R., 37 Clinton avenue, Jersey City.
Bogardus, H. J., 427 Bergen avenue, Jersey City.
Borgmeyer, J. G., 90 West Eighth street, Bayonne.
Bowen, Horace, Hudson Boulevard, Cor. Sip avenue, Jersey City.
Bowley, Helen F. L., 502 Bergen avenue, Jersey City.
Bowyer, F. F., 262 Barrow street, Jersey City.
Brady, _____, Town of Union.
Brady, Wm. A., 424 Eighth street, West New York.
Bramley, James R., 106 Midland avenue, Arlington.
Branner, W. S., 839 Garden street, Hoboken.
Brinkerhoff, Henry H., 695 Bergen avenue, Jersey City.
Broderick, Jno. J., 355 Pacific avenue, Jersey City.
Broeser, Henry V., 628 Hudson street, Hoboken.
Brokhaus, Maria H., 500 Hudson street, Hoboken.

Brooke, W. W., 915 Avenue C, Bayonne.
Brown, Bailie, 88 Bowers street, Jersey City.
Brown, Chester R., 106 Midland avenue, Arlington.
Brown, Harold T., 62 Kensington avenue, Jersey City.
Bull, E. L., Madison avenue, Cor. Bramhall avenue, Jersey City.
Burnett, Henry H., 724 Washington street, Hoboken.
Byrne, Thos., 312 Shippen street, West Hoboken.

Cadmus, W. J., 239 Newark avenue, Jersey City.
Callan, T. C., Harrison.
Cameron, Etia V., 236 Grove street, Jersey City.
Cangiaolai, I., 146 Avenue C, Bayonne.
Cannon, Geo. E., 354 Pacific avenue, Jersey City.
Case, Charles H., 374 Forrest street, Jersey City.
Chambers, T. E., 15 Exchange Pl., Jersey City.
Chard, John A., 14 Virginia avenue, Jersey City.
Chester, Seth A., 2771 Hudson Boul., Jersey City.
Child, Frank M., 1222 Bloomfield street, Hoboken.
Cimlott, W. F., 171 Fallsade avenue, West Hoboken.
Clark, Chas. C., 461 Clinton avenue, West Hoboken.
Clemens, J. J., West New York.
Clouse, M. W., Kearney.
Clute, Russell, 707 Park avenue, Hoboken.
Coker, George T., 18 Britten street, Jersey City.
Commarato, J. R., 262 Montgomery street, Jersey City.
Connell, John, 87-A Bowers street, Jersey City.
Connelly, John F., 267 Avenue C, Bayonne.
Converse, Chas. B., 218 Fallsade avenue, Jersey City.
Cook, John, 38 E. Twenty-second street, Bayonne.
Cooper, Charles M., 90 Wayne street, Jersey City.
Corwin, Fred. M., 696 Avenue C, Bayonne.
Cosgrove, Sam'l E., 757 Ocean avenue, Jersey City.
Craig, B., 61 Highland avenue, Jersey City.
Craven, Jos. J., 306 Varick street, Jersey City.
Crocker, Chas. C., 100 Thirteenth street, Hoboken.
Cropper, Chas. W., 85 Gifford avenue, Jersey City.
Crudden, Francis, 227 Warren street, Jersey City.

Culver, D. L., 287 York street, Jersey City.
Culver, George M., 25 Glenwood avenue, Jersey City.
Culver, John W., 76 Congress street, Jersey City.
Culver, S. Herbert, 98 Magnolia avenue, Jersey City.
Curtis, G. P., Town of Union.
D'Acerno, P., 262 Seventh street, Hoboken.
Daly, Bert, 146 Avenue C, Bayonne.
Dash, E. A., 238½ Henderson street, Jersey City.
Davey, Frank J., 1242 Garden street, Hoboken.
Davey, Thos. N., 43 West Thirty-third street, Bayonne.
Davidson, Wm., 139 Carteret avenue, Jersey City.
De Angelis, Benedict, 411 Monroe street, Hoboken.
Deary, L. E., 11 W. Thirty-third street, Bayonne.
Decker, C. L., 710 Ocean avenue, Jersey City.
De Groff, Ephraim, Union Hill.
De Hart, Clara, 99 Mercer street, Jersey City.
Del Bagibro, Emilio, 338 First street, Jersey City.
De Leitto, F., 72 West Twenty-second street, Bayonne.
De Merritt, Chas. L., West Hoboken.
Denis, L. A., 313 Stevens street, West Hoboken.
Dexter, H. Tracy, Avenue C and Forty-fourth street, Bayonne.
Dexter, Henry, Avenue C and Forty-fourth street, Bayonne.
Dickinson, G. K., 278 Montgomery street, Jersey City.
Diem, Oscar, 329 Hudson street, Hoboken.
Dingelstedt, R. H., 619 Hudson street, Hoboken.
Dodd, Edward L., 26 Exchange Pl., Jersey City.
Dodson, L. W., 680 Jersey avenue, Jersey City.
Doherty, John M., 272 Barrow street, Jersey City.
Dolphin, M. O. F., Harrison.
Donohue, L. F., 33 Dodge, Bayonne.
Dorems, W. E., Arlington.
Drasel, Chas., 74 Paterson Pl. Rd., West Hoboken.
Drasel, Gustav W., 90 Jefferson street, Hoboken.
Drasel, William A., 91 Jefferson street, Hoboken.
Drayton, Henry S., 70 Brinkerhoff street, Jersey City.
Drossner, Morris, 852 Bergen avenue, Jersey City.
Duckett, Warren, 932 Summit avenue, Jersey City.

Dunkel, Edwin K., 264 Montgomery street, Jersey City.
 Durrie, W. A., 104 Belmont avenue, Jersey City.
 Edgar, Joseph A., 71 Congress street, Jersey City.
 English, L. F., 308 Montgomery street, Jersey City.
 Enright, Jas. G., 311 York street, Jersey City.
 Everitt, Chauncey V., 38 Boyd avenue, Jersey City.
 Everitt, Jno. R., 38 Boyd avenue, Jersey City.
 Exton, Jas. A., Arlington.
 Faber, Jno., 289 Central avenue, Jersey City.
 Faison, Wm. L., 45 Glenwood avenue, Jersey City.
 Farr, Jr., J. C., 1228 Bloomfield avenue, Hoboken.
 Farrell, John B., 55½ Mercer street, Jersey City.
 Fendrick, Adam E., 36 Bonn Place, Weehawken.
 Fenry, Frederick, 556 Bramhall avenue, Jersey City.
 Fester, Dr., West New York.
 Fink, C. H., 315 York street, Jersey City.
 Finn, Frederick A., 157 Danforth avenue, Jersey City.
 Finnerty, Jno. H., 217 Eighth street, Jersey City.
 Flaherty, M. E., 277 Summit avenue, Jersey City.
 Fletcher, Zachary Peck, 23 Cottage street, Jersey City.
 Foley, M. F., 710 Hudson street, Hoboken.
 Fopeano, Jos. E., 265 Fourth street, Hoboken.
 Forman, A. C., 33 W. Thirty-second street, Bayonne.
 Forman, Howard S., 103 Jewett avenue, Jersey City.
 Frace, P. W., 115 Bloomfield avenue, Hoboken.
 Frank, M., 16 W. Twenty-second street, Bayonne.
 Franklin, L., 125 Palisade avenue, Jersey City.
 Frech, E. D., 41 Emory avenue, Jersey City.
 Frelle, Wm., 108 Palisade avenue, Jersey City.
 Freidman, Aaron, 801 Washington street, Hoboken.
 Fyfe, G., 540 Bramhall avenue, Jersey City.
 Gamson, E., 39 W. Twenty-second street, Bayonne.
 Gardner, J. W., 626 Ocean avenue, Jersey City.
 Gelbach, Rudolph W., 809 Hudson street, Hoboken.

Ghee, Peter F., 736 Ocean avenue, Jersey City.
 Gilchrist, C. A., 916 Hudson street, Hoboken.
 Gille, Hugo, 149 Congress street, Jersey City.
 Gilman, Robt. B., 85 Congress street, Jersey City.
 Goldberg, Eugene H., Kearney.
 Goldstone, Karl H., 264 Montgomery street, Jersey City.
 Good, Dr., 348 Park avenue, Town of Union.
 Goudy, E. S., Kearney.
 Granelli, M. S., 102 Bloomfield avenue, Hoboken.
 Gray, F. C., 646 Avenue C, Bayonne.
 Gray, Frank D., 111 Belmont avenue, Jersey City.
 Greene, A. D., 225 Palisade avenue, West Hoboken.
 Grew, Francis B., 61 Garden street, Hoboken.
 Guggenheim, M., 532 Clinton avenue, West Hoboken.
 Guilfoyle, John, 79 Sea View avenue, Jersey City.
 Haase, Henry W., 240 Warren street, Jersey City.
 Hallock, Wm. J., 160 Summit avenue, Jersey City.
 Hamill, Patrick, 300 Varick street, Jersey City.
 Hardenberg, Daniel S., 157 Belmont avenue, Jersey City.
 Hart, Edwin P., 292 Montgomery street, Jersey City.
 Hasking, A. P., 318 Montgomery street, Jersey City.
 Hecht, Max, West Hoboken.
 Heintzelman, B., 15 West First street, Bayonne.
 Hendrick, C. C., 524 Garden street, Hoboken.
 Hetherington, Wm. L., 299 Varick street, Jersey City.
 Hilfer, S. C., 136 Fourth street, Town of Union.
 Hill, A. V., Guttenburg.
 Hill, C. D., 290 York street, Jersey City.
 Hirsch, Richard, 221 Garfield avenue, Jersey City.
 Hobbitzell, Wm., 81 Bowers street, Jersey City.
 Hoening, Chas. H., 629 Hudson street, Hoboken.
 Hoffman, Peter, Jr., 209 Pavonia avenue, Jersey City.
 Hollister, Sam'l A., 108 Danforth avenue, Jersey City.
 Holloway, John M., 539 Summit avenue, Jersey City.
 Hommel, Philon E., 689 Bergen avenue, Jersey City.
 Hornblower, Josiah, 322 Central avenue, Jersey City.

Hornblower, Theo., 913 Bergen avenue, Jersey City.
 Horner, Geo. A., 302 Grove street, Jersey City.
 Hotwet, H. A., Weehawken.
 Hunt, J. J., Forty-eighth street and Avenue C, Bayonne.
 Hyman, J. B., 61 Siedler avenue, Jersey City.
 Jacquemin, Dr., 506 Clinton avenue, West Hoboken.
 Jaffin, Abram E., 479 Jersey avenue, Jersey City.
 Jahr, R. E., 306 Shippen street, West Hoboken.
 Jaques, E. J., 74 Waverly street, Jersey City.
 Jardine, M. A., 84 Slip avenue, Jersey City.
 Jones, J. Morgan, 2800 Hudson Boul., Jersey City.
 Justin, John C., West New York.
 Kahrs, Grace M., 1031 Garden street, Hoboken.
 Kaiser, J. Jay, 327 Oak street, West Hoboken.
 Kavanagh, J. A., 579 Jersey avenue, Jersey City.
 Keegan, Thomas D., 838 Grand street, Jersey City.
 Keuhne, Richard, 1118 Summit avenue, Jersey City.
 Keuhne, Robert, 1118 Summit avenue, Jersey City.
 King, Geo. W., Snake Hill.
 King, John W., 292 Pavonia avenue, Jersey City.
 Kirschenbaum, Fred., 3 Hampton Ct. Ter., Jersey City.
 Kirsten, John A., 287 Varick street, Jersey City.
 Klein, Anna K., 172 Bowers street, Jersey City.
 Klein, E., 181 Prospect avenue, Bayonne.
 Knauss, S. M., 272 Montgomery street, Jersey City.
 Koox, P., 39 Gifford avenue, Jersey City.
 Kopetschuy, E. F., 591 Jersey avenue, Jersey City.
 Kopetschuy, Otto E., 591 Jersey avenue, Jersey City.
 Koppel, Joseph, 122 Mercer street, Jersey City.
 Krause, Gustav A., 75 Montgomery street, Jersey City.
 Kudlich, Jno., 506 Hudson street, Hoboken.
 Kudlich, Wm. T., 408 Hudson street, Hoboken.
 Kyte, Calvin F., 77 Garrison avenue, Jersey City.
 Lambert, F. E., 157 Ocean avenue, Jersey City.

Lampson, Mortimer, 322 Pacific avenue, Jersey City.
 Lange, Chas., 289 Summit avenue, West Hoboken.
 Larkey, C. J., 44 West Twenty-second street, Bayonne.
 Lautmann, John, 95 Mercer street, Jersey City.
 Lemmerz, Thos. H., 143 Magnolia avenue, Jersey City.
 Leonard, Edwin, Jr., 123 Gifford avenue, Jersey City.
 Lewis, E. D., 54 Gardner avenue, Jersey City.
 Lewis, Livingston L., 710 Washington street, Hoboken.
 Lewis, Wm. C., 339 Pacific avenue, Jersey City.
 Lignot, Albert J., 269 Garfield avenue, Jersey City.
 Limeburner, C. A., 79 Danforth avenue, Jersey City.
 Lindenbaum, Henry, 235 Garden street, Hoboken.
 Lintpold, Dr., 138 Fourth street, Town of Union.
 Lochner, Jno., 583 Jersey avenue, Jersey City.
 Lockwood, H. L., 449 Ocean avenue, Jersey City.
 Loewy, Morris, 1251 Garden street, Hoboken.
 Longigan, Jos. F., 706 Garden street, Hoboken.
 Loomis, Albert J., 282 Montgomery street, Jersey City.
 Lutkins, Wm. C., 276 Montgomery street, Jersey City.
 Macmillan, J. W., 313 Webster avenue, Jersey City.
 MacMurrugh, Francis K., 288 Pacific avenue, Jersey City.
 Magnier, John J., 245 Seventh street, Jersey City.
 Malsner, E., Town of Union.
 Mallalieu, Frank W., 16 Monticello avenue, Jersey City.
 Maloney, Thos. J., 114-A Mercer street, Jersey City.
 Marggraf, C. C., 102 Danforth avenue, Jersey City.
 Marks, E. G., Arlington.
 Martine, Jennie W., 201 Palisade avenue, Jersey City.
 Mathews, Wm. J., 1009 Garden street, Hoboken.
 Matthei, Edward, 86 Bowers street, Jersey City.
 Maxon, C. B., 420 Bergen avenue, Jersey City.
 May, Chas. H., 98 Palisade avenue, Jersey City.
 Mayer, Wallace W., 707 Ocean avenue, Jersey City.
 McDede, Jos. S., 412 West Side avenue, Jersey City.
 McGeavy, Thos. J., 173 Claremont avenue, Jersey City.

- McGill, Jno. D., 264 Montgomery street, Jersey City.
- McGlennon, Wm., Harrison.
- McLaughlin, Geo. E., 41 Crescent avenue, Jersey City.
- McLean, John J., 430 Hoboken avenue, Jersey City.
- McLoughlin, Thos. J., 538 Jersey avenue, Jersey City.
- McNamara, T. C., 613 Hudson street, Hoboken.
- McNenney, Clarence E., 116 Mercer street, Jersey City.
- Mead, W. S., Arlington.
- Melsgeler, Edward B., Cor. Hudson avenue and Union street, Town of Union.
- Mendelsohn, Lewis, 120 Mercer street, Jersey City.
- Mersheimer, Christian H., 258 Palisade avenue, Jersey City.
- Meyer, Frederick W. A., 221 Garfield avenue, Jersey City.
- Meyer, Wm., West Hoboken.
- Meyers, Samuel L., 750 Avenue C, Bayonne.
- Mooney, Jno. J., 554 Jersey avenue, Jersey City.
- Morse, George W., 249 Harrison avenue, Jersey City.
- Mulligan, A., Harrison.
- Mulvaney, Edward, 485 Jersey avenue, Jersey City.
- Muttart, Geo. W., 702 Ocean avenue, Jersey City.
- Mutter, Alfred A., 447 Kearny avenue, Kearny.
- Nalitt, David I., 24 East Twenty-second street, Bayonne.
- Nattnass, Robert B., 736 Garden street, Hoboken.
- Nay, Charles L., 98 Palisade avenue, Jersey City.
- Nelson, A., 105 Grand street, Jersey City.
- Nevin, John J., Boulevard and Kensington avenue, Jersey City.
- Nevin, Joseph L., 158 Bowers street, Jersey City.
- Nichols, Frank, 723 Washington street, Hoboken.
- Nichols, I. DeForrest, 108 Newark avenue, Jersey City.
- Nichols, G. Louis, 723 Washington street, Hoboken.
- Nuse, Edward F., 550½ Jersey avenue, Jersey City.
- O'Connor, J. F., 35 Kearny avenue, Kearny.
- Oestmann, Aug. W., 961 Summit avenue, Jersey City.
- O'Gorman, M. W., 38 Erie street, Jersey City.
- Older, Benjamin, 520 Clinton avenue, West Hoboken.
- Ollpp, A. E., 412 High street, West Hoboken.
- O'Mara, Thos. J., 303 Summit avenue, Jersey City.
- O'Neill, John H., 270 Montgomery street, Jersey City.
- Opdyke, Chas. P., 2633 Hudson Boul., Jersey City.
- Opdyke, Livingston A., 55 Clinton avenue, Jersey City.
- Ovens, Ritchie, 141 Mercer street, Jersey City.
- Paganelli, T. R., 836 Garden street, Hoboken.
- Parker, Wm. J., 694 Bergen avenue, Jersey City.
- Patterson, Wm. F., 824 Washington street, Hoboken.
- Pendergast, E. J., 47 Cottage street, Jersey City.
- Peteler, A., 77 Brinkerhoff street, Jersey City.
- Peterson, Chas. A., 336 Garden street, Hoboken.
- Peterson, L. A., 326 Bloomfield street, Hoboken.
- Pezzi, Louis, 280 Fourth street, Jersey City.
- Pfannenschmid, Conrad, 220 Hudson street, Hoboken.
- Phyla, Immanuel, 56 Monticello avenue, Jersey City.
- Pindar, F. S., West New York.
- Pindar, Wm., West New York.
- Pinder, David B., 201 Garden street, Hoboken.
- Pinkerton, W. A., 375 Avenue C, Bayonne.
- Piskorski, Aldon D., 604 Jersey avenue, Jersey City.
- Pollack, Berthold S., 241 Grove street, Jersey City.
- Poock, Joseph T., 816 Bloomfield street, Hoboken.
- Poole, Louis E., 521 Palisade avenue, West Hoboken.
- Poster, Louis, 108 Newark avenue, Jersey City.
- Pringle, Jno., East Newark.
- Purdy, Chas. H., 312 Montgomery street, Jersey City.
- Putnam, Chas. E., 64 Sip avenue, Jersey City.
- Pyle, Immanuel, 54 Monticello avenue, Jersey City.
- Pyle, Wallace, 15 Exchange Pl., Jersey City.
- Pyle, Wm. L., 713 Bergen avenue, Jersey City.
- Quigley, Dr., Town of Union.
- Rabe, Rudolph F., 1128 Bloomfield street, Hoboken.
- Radue, Dr., Town of Union.
- Ramsey, Murray E., 402 Arlington avenue, Jersey City.
- Rector, Jos. M., 307 York street, Jersey City.
- Reich, S. A., 959 Summit avenue, Jersey City.
- Reid, Jno. W., Kearny.
- Renwick, Andrew G., 61 Brinkerhoff street, Jersey City.
- Rhia, W. W., 25 W. Twenty-sixth street, Bayonne.
- Robertson, Frederick C., 27 Monticello avenue, Jersey City.
- Robinson, T. W., 579 Jackson avenue, Jersey City.
- Rosenkrans, Jas. H., 826 Hudson street, Hoboken.
- Rosenstein, Jacob L., 135 Wayne street, Jersey City.
- Rowe, Norman L., 798 Grand street, Jersey City.
- Ruck, Walter, Kearny.
- Rudolph, John J., 606 Garden street, Hoboken.
- Rue, Henry B., 921 Bloomfield street, Hoboken.
- Rundlett, Emille V., 1 Booraem avenue, Jersey City.
- Russell, David L., 537 Summit avenue, Jersey City.
- Russi, Oscar J., 221 Pavonia avenue, Jersey City.
- Salmon, Edward H., 209 York street, Jersey City.
- Sanborn, J. L., 17 E. Thirty-third street, Bayonne.
- Sauer, Ferdinand N., 314 Varick street, Jersey City.
- Schlemm, Richard, Union Hill.
- Schlich, Philip F., 782 Montgomery street, Jersey City.
- Schmidt, Julius W. A., West Hoboken.
- Schoenberg, M. J., 611 Hudson street, Hoboken.
- Schuck, T. John, 1020 Hudson street, Hoboken.
- Schultz, Henrietta W., 800 Grand street, Jersey City.
- Schumacher, Frederick, 285 Halladay street, Jersey City.
- Schwartz, W. J. A., 334 Seventh street, Jersey City.
- Sexsmith, Geo. H., 719 Avenue C, Bayonne.
- Shapiro, M., 44 W. Twenty-third street, Bayonne.
- Shenler, L. H., West New York.
- Shera, G. W., 44 Gifford avenue, Jersey City.
- Sherra, George W., 112 Mercer street, Jersey City.
- Sherwood, Henry D., 579 Summit avenue, Jersey City.
- Shipman, Frank C., 54 Grace street, Jersey City.
- Shireson, Henry J., 108 Newark avenue, Jersey City.
- Short, Francis J., 670 Jersey avenue, Jersey City.
- Short, Wm. H., 71 Wayne street, Jersey City.
- Simmons, Harris R., 557 Bramhall avenue, Jersey City.
- Simon, C. Irving, 722 Washington street, Hoboken.
- Simpson, Maxwell G., 23 Exchange Pl., Jersey City.
- Sisler, John H., 613 Ocean avenue, Jersey City.
- Smith, Henry V. A., 554 Summit avenue, Jersey City.
- Smith, J. S., 765 Avenue C, Bayonne.
- Snyder, John E., 134 Jefferson street, Hoboken.
- Snyder, John E. C., 922 Willow avenue, Hoboken.
- Spaulding, J., Town of Union.
- Spath, George B., 707 Park avenue, Hoboken.
- Spence, Henry, 681 Bergen avenue, Jersey City.
- Sprague, Ezra K., 283 Grove street, Jersey City.
- Sprague, Seth B., 283 Grove street, Jersey City.
- Spronis, Joseph A., 160 Bright street, Jersey City.
- Squler, M. F., 234 Harrison avenue, Harrison.
- Stack, Jos. F. X., 212 Garden street, Hoboken.
- Steadman, Evan T., 635 Washington street, Hoboken.
- Steadman, W., 706 Bloomfield street, Hoboken.
- Stearns, F. C., 62 Bay View avenue, Jersey City.
- Stellwagen, F. B., Union Hill.
- Stevens, P. F., 950 Avenue D, Bayonne.
- Stewart, Robert, 832 Grand street, Jersey City.
- Stigner, Peter, 138 Chestnut street, Jersey City.
- Stout, S. V. W., 995 Summit avenue, Jersey City.
- Strasser, Aug. A., Arlington.
- Straughn, Fred., 9 Astor Place, Jersey City.
- Street, Daniel B., 441 Ocean avenue, Jersey City.
- Stroud, Jas. B., 57½ Jewett avenue, Jersey City.
- Sullivan, Jas. A., 649 Jersey avenue, Jersey City.
- Sullivan, Margaret N., 251 Baldwin avenue, Jersey City.
- Sulouff, S. Henry, 10 W. Hamilton Pl., Jersey City.
- Swiney, M. A., 283 Avenue C, Bayonne.
- Symanski, T., 45 Orient avenue, Jersey City.
- Tipper, M., 486 Broadway, Bayonne.
- Thornley, Dr., Harrison.
- Thum, Ernest, 823 Avenue D, Bayonne.
- Tobnu, Charles M., 59 Atlantic avenue, Jersey City.
- True, W. F., 12 E. Thirty-second street, Bayonne.

Tucker, Ernest E., 142 Summit avenue, Jersey City.

Valentine, Edward G., 559 Summit avenue, Jersey City.

Van Deestlin, H. T., 619 Garden street, Hoboken.

Van Nuis, Dr., 533 Fallsade avenue, West Hoboken.

Vreeland, Clarence L., 174 Ocean avenue, Jersey City.

Vreeland, Hamilton, 79 Summit avenue, Jersey City.

Vreeland, Wm., 2 Park street, Jersey City.

Wainwright, John M. B., 315 Varick street, Jersey City.

Walscheid, C. J., 307 Fulton street, Town of Union.

Ware, Jas. W., 977 Avenue C, Bayonne.

Warwick, Hill S., 49 Clinton avenue, Jersey City.

Watson, W. Perry, 116 Gifford avenue, Jersey City.

Weldner, Arthur D., 166 Vroom street, Jersey City.

Well, Edwin M., 225 Fifth street, Jersey City.

Weitz, Louis J., West Hoboken.

Wenger, Dr., Union Hill.

Westervelt, Edwin A., 54 Brinkerhoff street, Jersey City.

White, George D., 698 West Side avenue, Jersey City.

White, John A., 435 Fairmount avenue, Jersey City.

White, Robt. P., 396 Fairmount avenue, Jersey City.

Wilkinson, George, 542 Bergen avenue, Jersey City.

Wilkinson, Walter, 546 Bergen avenue, Jersey City.

Willis, John, 609 Pavonia avenue, Jersey City.

Willis, Mary A., 3 Astor Place, Jersey City.

Wilson, M. S., 821 Washington street, Hoboken.

Winter, Dan'l T., 94 Duncan avenue, Jersey City.

Wirtz, Louis G., 412 West street, West Hoboken.

Woelfe, Henry E., 907 Summit avenue, Jersey City.

Wolff, F. C., 1136 Garden street, Hoboken.

Wolfson, Jos., 93 Mercer street, Jersey City.

Wolfstirn, Louis, 200 Hudson street, Hoboken.

Woodruff, S. R., 22 West Twenty-second street, Bayonne.

Zenneck, Julius, 204 Eleventh street, Hoboken.

HUNTERDON COUNTY.

Allen, Edgar, Bloomsbury.

Alpaugh, Wm. C., High Bridge.

Aggar, F. A., New Germantown.

Best, Geo. W., Rosemont.

Betts, Jas. A., Bloomsbury.

Birtz, Isaac, White House.

Blackwell, E., Clinton.

Boyer, Chas. H., Riegelsville.

Carpenter, D. M., Milford.

Carpenter, Wm. R., Mt. Pleasant.

Chamberlain, John L., Sergeantsville.

Clark, G. F., White House Station.

Closson, Edw. W., Lambertville.

Crispin, Samuel D., Bloomsbury.

Crystell, Edward H., Calton.

Davis, L. E., Hampton.

Decker, T. H., Frenchtown.

Denny, E. K., Frenchtown.

Eastwood, Edmund, High Bridge.

English, S. B., Glen Gardner.

Exton, Henrietta L., Clinton.

Finney, W. F., Frenchtown.

Frace, J. M., Clinton.

Fritz, John H., Lambertville.

Fuhrmann, Barclay S., Flemington.

Fulper, T. B., Lebanon.

Grim, Frank S., Locktown.

Hahn, A. J., Pattenburg.

Halstead, C. F., High Bridge.

Harman, Henry M., Frenchtown.

Hart, A. M., Ringoes.

Hell, A. A., Milford.

Henry, Geo., Flemington.

Hunt, Edgar, Glen Gardner.

Johnson, F. L., Stanton.

Johnson, John V., Stanton.

Johnson, Thos., Readington.

Knight, Wm., Clinton.

Lapkins, Isidore, Calton.

Larison, Frank W., Lambertville.

Lever, Morris D., Quakertown.

Low, F. C., High Bridge.

Miller, H. H., Lebanon.

Miller, John, Calton.

Mills, Clifford, Calton.

Mills, George G., Annandale.

More, E. H., White House.

Nixon, Warford L., Readington.

Reigel, E. L., Bloomsbury.

Romaine, Geo. L., Lambertville.

Rufe, John J., High Bridge.

Salmon, Leon T., Lambertville.

Schenk, W. H., Flemington.

Snyder, Q. E., Quakertown.

Sproul, O. H., Flemington.

Thomas, A. F., Flemington.

Topkins, A., Calton.

Williams, Louis C., Lambertville.

Williams, W. C., Milford.

Young, Peter C., Ringoes.

MERCER COUNTY.

Ackley, David B., 878 E. State street, Trenton.

Adams, C. F., 52 W. State street, Trenton.

Allen, E. B., 144 Perry street, Trenton.

Applegate, E. T. R., 1125 Greenwood avenue, Trenton.

Arthur, F. M., Hamilton Square.

Atkinson, A. W., 423 E. State street, Trenton.

Barrows, Arthur, 300 S. Clinton avenue, Trenton.

Barwis, Elmer, 211 Hamilton avenue, Trenton.

Beatty, H. M., 50 Centre street, Trenton.

Bells, H. D., 870 E. State street, Trenton.

Belting, Arthur, The Aleda, Trenton.

Bergen, E. H., 50 Nassau street, Princeton.

Boice, Harry B., 929 Carteret avenue, Trenton.

Bruere, A. T., 252 Spring street, Trenton.

Bruyere, J., 123 Perry street, Trenton.

Carnochan, J. H., 8 Nassau street, Princeton.

Clark, W. A., Jr., 51 W. State street, Trenton.

Collier, W. S., 723 S. Broad street, Trenton.

Cooper, J. R., 225 Hamilton avenue, Trenton.

Cooper, W. H., 112 N. Warren street, Trenton.

Cornell, Van A., 41 W. State street, Trenton.

Cort, Paul L., 144 W. State street, Trenton.

Costill, H. B., 21 N. Clinton avenue, Trenton.

Cotton, Henry A., State Hospital, Trenton.

Crane, J. Wellington, 128 Third street, Trenton.

Craythorn, C. J., 302 W. State street, Trenton.

Christiani, Michael, 200 Hudson street, Trenton.

D'Arcy, Walter, 520 Centre street, Trenton.

Davidson, R. W., 546 N. Clinton avenue, Trenton.

Denelsbeck, J. G., 230 N. Warren street, Trenton.

Dewey, J., 78 N. Clinton avenue, Trenton.

DeWitt, E., Lawrenceville.

Dey, A. H., 436 E. State street, Trenton.

Dickinson, E. L., 100 Greenwood avenue, Trenton.

Dorety, Philip J., 995 S. Broad street, Trenton.

Fee, E. K., Lawrenceville.

Fell, A. S., 312 E. State street, Trenton.

Felty, J. C., State Hospital, Trenton.

Finney, Wm. F., 237 N. Warren street, Trenton.

Franklin, C. M., Hightstown.

Franklin, Geo. H., Hightstown.

Freeman, Samuel, 560 E. State street, Trenton.

Fuchs, Jacob, 836 S. Broad street, Trenton.

Funkhauser, Edwin B., State Hospital, Trenton.

Goodson, Marcus, 521 S. Warren street, Trenton.

Gordon, C. H., 808 E. State street, Trenton.

Gordon, E. J., 228 S. Clinton avenue, Trenton.

Grabowski, C. E., 245 Adeline street, Trenton.

Griffith, W. H. G., 217 Hamilton avenue, Trenton.

Hall, W. J., 438 E. State street, Trenton.

Hammond, F. S., State Hospital, Trenton.

Harman, Wm. J., 1162 E. State street, Trenton.

Harris, Frank, 214 N. Warren street, Trenton.

Hart, Edgar, Pennington.

Hawke, Edw. S., 124 E. Hanover street, Trenton.

Higgins, J. F., 663 Centre street, Trenton.

Hill, Frederick E., 37 Spring street, Trenton.

Holcomb, Chas. H., 32 W. State street, Trenton.

Hutchinson, A. D., 419 Chestnut avenue, Trenton.

Ivins, Howard, 214 E. Hanover street, Trenton.

Johnson, J. P., Hightstown.

Kent, M. M., 231 N. Warren street, Trenton.

Kirkpatrick, M. B., 925 S. Clinton avenue, Trenton.
 Kiss, Theodore, 1037 S. Clinton avenue, Trenton.
 Kuhl, Paul E., 373 Hamilton avenue, Trenton.
 Lalor, W. S., 220 N. Warren street, Trenton.
 Leigh, Chester A., 344 Hamilton avenue, Trenton.
 Loos, I. B., 310 E. State street, Trenton.
 Macdonald, A. K., 11 University Place, Princeton.
 MacFarland, Burr W., 9 E. State street, Trenton.
 Mackenzie, T. H., 528 E. State street, Trenton.
 MacLaren, W. L., Princeton.
 Madden, W. F., 324 S. Broad street, Trenton.
 McCullough, J. H., 523 E. State street, Trenton.
 McCullough, W. G., The Aleda, Trenton.
 McGuire, James, 330 S. Broad street, Trenton.
 McKinney, Wm. G., Clinton Street Station, Trenton.
 Merrow, Llewella, 423 E. State street, Trenton.
 Miller, John A., Hopewell.
 Miller, Robt F., Hopewell.
 Mitchell, Chas., 116 Centre street, Trenton.
 Moore, Geo. R., 259 Hamilton avenue, Trenton.
 Newell, William A., 566 E. State street, Trenton.
 Niedermeyer, A. F., 330 N. Clinton avenue, Trenton.
 North, Harry R., 284 Hamilton avenue, Trenton.
 Norton, H. G., 429 E. State street, Trenton.
 Oliphant, N. B., 152 W. State street, Trenton.
 Pantaleone, Raphael, 333 Elmer street, Trenton.
 Parker, G. H., 420 E. State street, Trenton.
 Parker, H. Norton, 706 Centre street, Trenton.
 Perkins, C. M., Princeton.
 Phillips, R. H. C., 209 Perry street, Trenton.
 Pierson, T. A., Hopewell.
 Proctor, J. E., Princeton.
 Radcliffe, Wm., Pennington.
 Radcliffe, Wm. M., The Leonard, Trenton.
 Read, C. H., 567 S. Warren street, Trenton.

Reddan, Martin W., 113 W. State street, Trenton.
 Richards, J. W., Pennington.
 Richardson, Harry T., 609 Stuyvesant avenue, Trenton.
 Rildout, Lilla, 219 Centre street, Trenton.
 Robbins, Geo. R., Hamilton Square.
 Rogers, R. B., Jr., 610 Perry street, Trenton.
 Rogers, R. R., Sr., 110 E. Hanover street, Trenton.
 Rogers, W. T., 225 Perry street, Trenton.
 Ruopp, Charles F., 1077 S. Broad street, Trenton.
 Sandy, Wm. C., State Hospital, Trenton.
 Satherwaite, Jos. H., 52 N. Stockton street, Trenton.
 Scammell, Frank G., 40 S. Clinton avenue, Trenton.
 Scarlett, Rufus B., 78 N. Clinton avenue, Trenton.
 Schoening, G. A., 223 Perry street, Trenton.
 Seeds, J. B., 491 Centre street, Trenton.
 Selbert, Raymond, 371 Hamilton avenue, Trenton.
 Shaw, J. B., 119 S. Warren street, Trenton.
 Shepherd, I. M., 188 S. Broad street, Trenton.
 Sica, Samuel, 309 S. Clinton avenue, Trenton.
 Silver, Geo. A., Windsor.
 Simpson, Maxwell, Titusville.
 Skellenger, Edward B., 851 Hamilton avenue, Trenton.
 Slack, Clarence J., 310 N. Broad street, Trenton.
 Smith, Houghton, 1137 Clinton avenue, Trenton.
 Sommer, G., 229 Perry street, Trenton.
 Stevenson, W. D., 42 S. Clinton avenue, Trenton.
 Stratton, Wm. M., 653 Centre street, Trenton.
 Taylor, Walter A., 63 Prospect street, Trenton.
 Thorn, C. J. G., 302 W. State street, Trenton.
 Titus, Geo. E., Hightstown.
 Tompkins, L. D., Gundling Bldg., Trenton.
 Turner, Irvine E., 403 E. State street, Trenton.
 Turner, Irvine F. P., Titusville.
 Van Duhn, W. B., 133 Perry street, Trenton.
 Van Nest, Geo., Hopewell.
 Ward, John W., Pennington.
 Warman, D., 239 Chestnut avenue, Trenton.

Waters, Chas. H., 50 W. Hanover street, Trenton.
 Watson, R. S., 811 Stuyvesant avenue, Trenton.
 Watts, Wilbur, 969 S. Broad street, Trenton.
 Wells, Jos. M., Clinton Street Station, Trenton.
 West, Edgar L., 274 Hamilton avenue, Trenton.
 Wikoff, J. H., 22 Nassau street, Princeton.
 Wilbur, W. L., Hightstown.
 Winship, W. W., Princeton.
 Witte, E. B., 425 E. State street, Trenton.
 Woodhull, A. A., Princeton.
 Woodward, E. B., Yardville.
 Wright, H. E., 66 Nassau street, Princeton.
 Yard, P. W., 727 S. Broad street, Trenton.
 Yayitulan, Dikran, 683 Stuyvesant avenue, Trenton.
 Zandt, F. B., Hamilton Square.

MIDDLESEX COUNTY.

Albright, J. E., South Amboy.
 Applegate, G. T., New Brunswick.
 Beekman, J. H., Sayreville.
 Brakley, P. W., Dunellen.
 Burnett, C., South River.
 Carroll, Edgar, Dayton.
 Collins, J. J., Woodbridge.
 Condon, Wm. J., 176 George street, New Brunswick.
 Cook, H. G., New Brunswick.
 Cottrell, Judson G., Perth Amboy.
 Crandall, I. C., Old Bridge.
 Cronk, E. I., 176 George street, New Brunswick.
 Davis, Wm., Perth Amboy.
 Donahue, F. M., New Brunswick.
 Dudley, G. S., 342 George street, New Brunswick.
 Ellis, Alfred L., Metuchen.
 English, D. C., New Brunswick.
 Eulner, E. H., South Amboy.
 Fithian, Geo. W., High street, Perth Amboy.
 Forney, N. N., Milltown.
 Greenwald, Max, Perth Amboy.
 Gross, Herman, Metuchen.
 Gulick, A. R., Perth Amboy.
 Guttman, Benj., New Brunswick.
 Haines, E. E., South Amboy.
 Hay, Joseph S., Perth Amboy.
 Henry, Frank, Perth Amboy.

Hoagland, B. W., Woodbridge.
 Hofer, Clarence A., Metuchen.
 Illes, B. G., 155 Bayard street, New Brunswick.
 Janeway, Henry H., 11 Livingston avenue, New Brunswick.
 Klein, Emanuel, Perth Amboy.
 Lippincott, L. Y., Metuchen.
 Long, Sam'l, New Brunswick.
 Lund, John L., 181 High street, Perth Amboy.
 Manning, Anna, Perth Amboy.
 McDowall, J. L., Perth Amboy.
 Meacham, E. A., South Amboy.
 Meacham, Thos. V., New Brunswick.
 Melzner, Martin S., Perth Amboy.
 Morrison, D. L., New Brunswick.
 Naulty, Chas. W., Perth Amboy.
 Nelson, Wm. J., New Market.
 Platt, T. H., Jr., Dunellen.
 Ramsey, Wm. E., Perth Amboy.
 Reason, John J., Carteret.
 Rice, J. W., New Brunswick.
 Riva, F. E., 47 Bayard street, New Brunswick.
 Rose, E., Perth Amboy.
 Runyon, Laurance, 422 George street, New Brunswick.
 Saulsberry, C. E., 75 Livingston avenue, New Brunswick.
 Selover, Sarah E. E., South River.
 Shannon, F. A., New Brunswick.
 Shinn, J. C., Jamesburg.
 Silk, Chas. I., Perth Amboy.
 Smith, A. L., New Brunswick.
 Smith, J. C., Dunellen.
 Spencer, Ira T., Woodbridge.
 Suidam, J. L., Jamesburg.
 Symmes, H. C., Cranbury.
 Ten Eycke, J. D., Franklin Park.
 Treganowan, A., South Amboy.
 Tyrrell, G. W., 222 State street, Perth Amboy.
 Ulmer, E., South Amboy.
 Vandyke, B. S., Cranbury.
 Voorhees, C. H., New Brunswick.
 Wantoch, Jos., Carteret.
 Whitaker, Frank, Cranbury.
 Whitaker, J. L., Cranbury.
 White, J. Leon, South Amboy.
 Whitford, M. J., New Market.
 Wilson, J. H., Perth Amboy.
 Woods, A. L., South River.
 Zant, H. D., Jamesburg.

MONMOUTH COUNTY.

Ackerman, J. T., Asbury Park.
 Ackerman, Jos., Asbury Park.
 Alday, H. B., Ocean Grove.
 Alday, J. H., Ocean Grove.
 Anderson, H. M., Allentown.
 Anderson, Wm. E., Englishstown.
 Angely, F. G., Avon.
 Applegate, Asher T., Englishtown.
 Armstrong, A. A., Fair Haven.
 Baker, G. H., Long Branch.
 Baruch, Simon, Long Branch.
 Beach, E. W., West Long Branch.
 Bennett, Henry H., Allenhurst.
 Bennett, J. W., Long Branch.
 Bennett, R. S., 516 Asbury avenue, Asbury Park.
 Beveridge, Wm. W., Asbury Park.
 Bradner, Wesley K., Bradley Beach.
 Brown, Harvey, Freehold.
 Bryan, Joseph H., Asbury Park.
 Budlong, O. W., Belford.
 Campbell, Wm. K., Long Branch.
 Carp, David H., Seabright.
 Chadwick, Francis T., Asbury Park.
 Chasey, James, Long Branch.
 Clark, O. A., 435 Bath avenue, Long Branch.
 Clayton, John C., Freehold.
 Coleman, Frederick F., 415 Second avenue, Asbury Park.
 Cooley, H. S., Keyport.
 Cooper, J. E., Shrewsbury.
 Coward, A. H., Bradley Beach.
 Crater, E. W., Oceanport.
 Currie, Mrs. 126 Main street, Ocean Grove.
 Davison, J. F., Asbury Park.
 Dederer, Carlton, Seabright.
 Dishrow, S. A., Ocean Grove.
 Dishrow, Stephen A., Farmingdale.
 Dorr, Henry B., 221 Asbury avenue, Asbury Park.
 Downes, Randolph E., Keansburg.
 Ely, J. D., Marlboro.
 Emley, H. H., Allentown.
 Failing, B. E., Atlantic Highlands.
 Fay, Geo. D., Atlantic Highlands.
 Field, Edwin, Red Bank.
 Garrison, B. H., Red Bank.
 Gibson, Helen F., Red Bank.
 Green, J. O., Long Branch.
 Griffith, Fred., Belmar.
 Haglestam, Richard, Matawan.
 Harlin, Wm. H., Oceanport.
 Harp, D. H., Sea Bright.
 Hartman, H. W., Keyport.
 Hassler, ———, Belmar.
 Havens, Walter, Farmingdale.
 Hendrickson, Dan'l D., Middletown.
 Hendrickson, H. A., Atlantic Highlands.

Hepburn, Wm. M., Freehold.
 Herbert, R. W., Manasquan.
 Hetrick, L. E., 531 Cookman avenue, Asbury Park.
 Higgins, A. S., Manasquan.
 Ingling, H. W., Freehold.
 Irvine, Nathan, Matawan.
 Jackson, A. J., Matawan.
 Johnson, H. P., Allentown.
 Johnson, Sam'l, Asbury Park.
 Killie, C. J., 510 Fourth avenue, Asbury Park.
 Kimball, R., Rumson.
 Kinmouth, H. S., Asbury Park.
 Kinmouth, W. C., Belmar.
 Kirkbride, M. F., Spring Lake Beach.
 Knecht, C., Matawan.
 Knight, T. R., Spring Lake.
 Kurtz, W. U., Asbury Park.
 Long, Isaac S., Freehold.
 Longstreet, Fred. I., Manasquan.
 McIlwaine, Chas. H., Sixth avenue, Asbury Park.
 McMellen, William T., Perrinville.
 McMillan, Geo. N., Turkey.
 Minmouth, W. L., Belmar.
 Mitchell, Henry, 1205 Grand avenue, Asbury Park.
 Neale, Harry, Freehold.
 Norris, C. A., Manasquan.
 O'ferman, John L., Highlands.
 Palmer, Chas. A., Farmingdale.
 Parks, W. J., 1115 Springwood avenue, Asbury Park.
 Partree, R. T., Eatontown.
 Patterson, Wm. F., Chapel Hill.
 Pemberton, H. H., Long Branch.
 Peteler, Alois, Keyport.
 Phelps, Flora, Ocean Grove.
 Potts, G. W., 903 Grand avenue, Asbury Park.
 Price, T. C., Imlaystown.
 Pumyea, D. B., Allentown.
 Rafferty, Peter P., Red Bank.
 Reed, Edwin B., Asbury Park.
 Reed, H. B., Sea Bright.
 Reed, J. J., Sea Bright.
 Reed, W. S., Long Branch.
 Roberts, D. E., Keyport.
 Robinson, W. A., Ocean Grove.
 Rose, J. Turner, 933 Bangs avenue, Asbury Park.
 Rush, J. C., Red Bank.
 Sayre, J. E., Red Bank.
 Sayre, Wm. D., Red Bank.
 Scott, E. A., 417 Summerfield avenue, Asbury Park.
 Shafer, Geo. W., Creamridge.

Shafto, C. W., 601 Lake avenue, Asbury Park.
 Shaw, H. E., Long Branch.
 Slocum, H. B., Long Branch.
 Slocum, W. H., Long Branch.
 Snow, H. M., Belmar.
 Straughn, C. C., Matawan.
 Taylor, John, 1211 Grand avenue, Asbury Park.
 Thompson, C. H., Belmar.
 Thompson, Fred. V., Holmdel.
 Tilton, W. S., Belmar.
 Todd, A. R., Ocean Grove.
 Treat, C. R., Belmar.
 Trout, W. W., Spring Lake.
 Tunis, Geo. S., Manasquan.
 Upham, D. Ella P., Asbury Park.
 Van Fleet, Walter, Little Silver.
 Van Mater, John H., Atlantic Highlands.
 Wagner, E. C., 613 Asbury avenue, Asbury Park.
 Wagner, W., Bradley Beach.
 Walnwright, J. B., Manasquan.
 Ward, ———, Rumson.
 Warner, W. B., Red Bank.
 Welch, J. T., Long Branch.
 Whitmore, W. S., Red Bank.
 Wilbur, G. F., Asbury Park.
 Williams, David, Farmingdale.
 Williams, J. S., Farmingdale.
 Wilsae, R., Browning, Red Bank.
 Wolfert, Wm. T., Red Bank.
 Woolley, J. Scudder, Long Branch.
 Wright, Laura M., 101 Heck avenue, Ocean Grove.
 Young, H. W., Red Bank.

MORRIS COUNTY.

Adsit, N. H., Succasunna.
 Allaben, Anna L., Morristown.
 Baker, A. T. L., Dover.
 Baker, E. D., Morris Plains.
 Bebout, T. W., Stirling.
 Becker, A., Morristown.
 Becker, G. A., Morristown.
 Belling, Christopher C., Morris Plains.
 Bennett, R. A., Dover.
 Carpenter, A. E., Boonton.
 Carroll, A. J., Dover.
 Clark, Emma, Dover.
 Coates, Geo. A., Butler.
 Condict, A. W., Dover.
 Connett, Geo. C., Morristown.
 Cook, R. L., Dover.
 Cooper, E. P., Troy Hills.
 Corwin, A. R., Morris Plains.
 Cossit, H. H., Morris Plains.
 Costello, J. W., Dover.
 Coultis, A. B., Madison.
 Davison, C. K., Netcong.
 Day, Harris, Chester.
 Decker, Clinton L., Boonton.
 De Groot, Geo. S., Mendham.
 Derry, W. E., Dover.
 Douglass, J. C., 98 Maple avenue, Morristown.
 Drake, D. E., Newfoundland.
 Edwards, D. J., Chatham.
 Evans, B. D., Morris Plains.
 Farrow, J. Willard, Dover.
 Flagg, F. W., Rockaway.
 Flanders, Anna R., Morristown.
 Forster, Wm. Story, Flanders.
 Foster, G. W., Rockaway.
 Frenald, Sarah De H., Mt. Freedom.
 Gilbert, F. W., Newfoundland.
 Glazebrook, Francis H., Morristown.
 Gordon, C. D., Mt. Arlington.
 Green, Alonzo, Chester.
 Griswold, James B., Morristown.
 Hann, P. S., Dover.
 Haven, Samuel C., Morristown.
 Henriques, H. A., Morristown.
 Horn, James, Flanders.
 Horstford, Frederick, Morris Plains Asylum, Morris Plains.
 James, Wm., German Valley.
 Johnson, Geo. L., Morristown.
 Kice, H. W., Wharton.
 Knowles, Freeman, Boonton.
 Krauss, F. Irving, Chatham.
 Lathroe, George H., 106 South street, Morristown.
 Lewis, A. A., 64 South street, Morristown.
 Longstreet, F. J., Montville.
 Lumsden, R. C., Rockaway.
 Mallon, P. S., Morris Plains.
 Messenger, C., Butler.
 McCormack, W. G., Madison.
 McGrath, Katherine, Gillette.
 McMurtrie, Wm. A., Mendham.
 Mial, L. L., Morristown.
 Miller, John, Netcong.
 Mills, Clifford, Morristown.
 Neldon, H. H., Netcong.
 Newcomb, George F., Pompton Plains.
 O'Shea, M. F., Dover.
 Owen, F. W., Morristown.
 Peck, E. M., Boonton.
 Plume, Clarence, Succasunna.
 Pollard, J. E., Chatham.
 Prager, Bert A., Chatham.
 Prout, T. P., Morris Plains.
 Reed, R. Ralston, 20 Elm street, Morristown.

Romant, C. D. V., Pompton Plains.
Rialcato, V., 42 Washington street, Morristown.
Ryerson, J. G., Boonton.

Scarborough, Chas. W., Madison.
Scott, M. E., Morris street, Morristown.
Seward, F. H., Madison.
Shippe, David, Butler.
Snyder, C. F., Madison.
Sutphen, E. B., 147 South street, Morristown.
Swain, Geo. M., Chatham.

Taylor, J. L., Boonton.
Thayer, H. W., Netcong.
Thorne, W. P., Butler.

Uebelacker, A., Morristown.
Upchurch, H. C., Kenil.

Vaughan, Harry, Morristown.

Walters, Jno., Wharton.
Wheeler, W. H., Boonton.
Wigg, Cuthbert, Boonton.
Wilkinson, Geo. W., Morristown.
Willis, George S., 180 South street, Morristown.
Wolfe, Theo. F., Succasunna.
Wolfe, Wm. J., Chatham.
Woodruff, Mrs. H. M. C., Boonton.

OCEAN COUNTY.

Allen, Howard, New Egypt.

Barrett, W. K., Manahawkin.
Eickler, Wm. J., New Egypt.
Blake, D. W., Forked River.
Brouwer, Frank, Toms River.
Bunnell, F. N., Barnegat.

Carrigan, E. S., Pt. Pleasant.
Conover, C. H., Tuckerton.
Conover, Howard, Barnegat.

Davis, H. H., Island Heights.
Deniston, Frank, Point Pleasant.
Disbrow, E. C., Toms River.
Disbrow, E. L., Toms River.
Disbrow, V. M., Lakewood.

Foltz, Clinton, Beach Haven.

Hance, I. H., Lakewood.
Hawley, B. F., Bay Head.
Heron, A. M., Lakewood.
Hilliard, J., Manahawkin.
Hilliard, P. K., Manahawkin.

Jones, Ralph, Toms River.

Katzenbach, W. H., Bay Head.

Laine, J. L., Manahawkin.
Lane, Lewis, Tuckerton.
Lindley, C. L., Lakewood.

Middleton, W. H., Pt. Pleasant.
Milton, D. J., Bay Head.
Moren, Michael A., New Egypt.

Pittis, Harold, Lakehurst.

Reeves, M., Tuckerton.

Schauffer, W. G., Lakewood.
Schureman, I. C., Toms River.
Scully, J. I., Island Heights.
Sparks, L. H., Lakewood.

Todd, J. Edward, Toms River.
Turriss, G. S., Burrsville.

Wallace, Gilbert E., Forked River.
Willis, Herbert, Beach Haven.
Wood, O. A., Forked River.
Woodward, Chas. P., New Egypt.

Zeligler, Dr., Island Heights.
Zettler, Forked River.

PASSAIC COUNTY.

Agnew, Frank, 29 Hamilton street, Paterson.
Alexander, Archibald, 379 Union avenue, Paterson.
Appleton, Walter F., 98 Lexington avenue, Passaic.
Armstrong, Robert R., 149 Lexington avenue, Passaic.
Atkinson, Jas. W., 27 Church street, Paterson.

Balleray, Geo. H., 115 Broadway, Paterson.
Baum, Soma, 150 Second street, Passaic.
Becker, Leo V., 81 Ward street, Paterson.

Becska, Victor G., 19 Second street, Passaic.
Berdan, Edith, 285 Summer street, Paterson.
Bergin, J. V., 19 Church street, Paterson.

Blundell, Wm., 236 Main street, Paterson.
Bondy, Sigmund E., 13 Monroe street, Passaic.

Borden, D. P., Hamilton and Ellison streets, Paterson.
Bowden, David T., 117 Paterson street, Paterson.

Bradsworth, John H., 261 River street, Paterson.
Bridoy, Harry E., 385 Main street, Paterson.

Bridoy, James F., 385 Main street, Paterson.
Browne, J. A., 811 Van Houten street, Paterson.

Browne, Wm. C., 98 Grant street, Passaic.
Bullen, Florence A., 287 Broadway, Paterson.

Bullen, Victor, 148 Hamilton avenue, Paterson.

Campbell, C. M., 642 Main street, Paterson.
Carlough, David J., 426 Ellison street, Paterson.

Carlough, Edna C., 426 Ellison street, Paterson.
Carr, Ada, Vreeland avenue, Paterson.
Carroll, C., Passaic.

Carroll, Wm. H., 156 Lexington avenue, Passaic.
Case, M. V., 39 Lincoln street, Passaic.
Casini, Ernest, 204 Madison street, Passaic.

Caverly, Fred S., 185 Passaic avenue, Passaic.
Chase, Wm. E., People Bank Bldg., Passaic.

Church, Chas. A., 128 Prospect street, Passaic.
Clay, Thomas A., 333 Totowa avenue, Paterson.

Cogan, Henry, 81 Bridge street, Paterson.
Colaurel, Nicola, 26 Ward street, Paterson.

Colfax, Wm., Pompton Lakes.
Corbin, L. C., 198-A Jefferson street, Passaic.
Cotton, Norman F., 217 Graham avenue, Paterson.

Coursen, T. D., Oak Ridge.
Crooks, Jas., 44 Church street, Paterson.
Crounse, D. R., 84 Bloomfield avenue, Passaic.

Cummings, Mary G., 449 Van Houten street, Paterson.
Curts, James H., 310 Broadway, Paterson.

Datesman, H. F., 141 President avenue, Passaic.
Day, H. V., Bloomingdale.
DeAugustinis, August, 316 Passaic avenue, Passaic.

De Bann, Edwin, 39 Prospect street, Passaic.
Decker, Wm. F., 122 Broadway, Paterson.

De Jager, S., 83 Bridge street, Paterson.
Demarest, F. F. C., 29 Academy street, Passaic.

Deaner, Edward F., 221 Broadway, Paterson.
Denton, Peter P., 1059 Madison avenue, Paterson.

Dingman, Thomas, 215 Broadway, Paterson.
Donahue, T. B., 357 Main street, Paterson.

Drews, Hugo, 145 Lexington avenue, Passaic.
Drury, Alfred, 180 Broadway, Paterson.
Duncan, O., Haledon.
Dunning, Walter L., 533 River street, Paterson.

Ekings, Frank P., 25 Church street, Paterson.
Emerson, Herbert, 84 Broadway, Paterson.

Faulkner, Jas. N., 149 Park avenue, Paterson.
Feigonoff, Isadore, 7 Bridge street, Paterson.

Fischer, Geo., 90 Auburn street, Paterson.
Flitcroft, Wm., River street, Paterson.
Flood, G. B., 279 Broadway, Paterson.

George, Roger P., 260 Park avenue, Paterson.
Gignoud, J. Ernest, 247 Gregory avenue, Passaic.

Gilson, Jno. F., 391 Main street, Paterson.
Gillon, M. W., 11 Lee Place, Paterson.

Glasgow, Thomas M., 190 Washington Pl., Passaic.
Golding, Harry N., 119 Broadway, Paterson.

Green, Wm. S., 73 Paterson street, Paterson.
Gutherson, Wm. F., 1013 Madison avenue, Paterson.

Hagen, Orville R., 160 Broadway, Paterson.
Haitinger, Coleman, Clifton.
Haitinger, Kalman, 125 Second street, Passaic.

Halnan, John J., 530 Main street, Paterson.
Harris, P. A., 26 Church street, Paterson.

Harris, Samuel E., 160 Third street, Passaic.
Henlon, E. L., 16 Church street, Paterson.

Hibsham, Walter, 98 Ellison street, Paterson.
Jacobs, Wm. H., 95 N. Main street, Paterson.

Joelson, Morris S., 132 Paterson street, Paterson.
Johnson, W. B., 170 Broadway, Paterson.

Joyce, Leo H., 259 Madison avenue, Passaic.
Joyce, Thomas F., 259 Madison avenue, Passaic.

Kane, Chas. J., 349 Grand street, Paterson.
Kane, Thos. J., 349 Grand street, Paterson.

Keating, Charles A., Jr., 184 Ellison street, Paterson.
Keller, Frank J., 379 Totowa avenue, Paterson.

Kinne, P. S., 171 Carroll street, Paterson.
Kip, Henry, 90 Fair street, Paterson.

Koch, George J., 130 Beech street, Paterson.
 Korsch, Morris, 171 Columbia avenue, Passaic.
 Leal, Jno. L., 194 Broadway, Paterson.
 Levine, Israel, 53 Paterson street, Paterson.
 Liebson, Michael, 315 Passaic street, Passaic.
 Lucas, H. H., 192 Van Houten street, Paterson.
 Luck, Paul M. K., 174 Monroe street, Passaic.
 Lydecker, A. A., Haledon.
 MacAlister, W. Wallace, 21 Church street, Paterson.
 MacAlister, Wm. W., Little Falls.
 Machlin, Abraham, 72 Second street, Passaic.
 Macintosh, M. A., 237 Broadway, Paterson.
 MacLauray, D. H., West Milford.
 Maclay, Joseph, 239 Broadway, Paterson.
 Magennis, B. C., 231 Broadway, Paterson.
 Mohony, Mary C., 39 Lincoln avenue, Passaic.
 Malnes, R. G., West Milford.
 Makepeace, Frank C., 60 N. Main street, Paterson.
 Maps, Howard L., 53 Passaic avenue, Passaic.
 Marsh, E. J., Jr., 24 Church street, Paterson.
 McBride, A. F., 397 Main street, Paterson.
 McCoy, Jno. C., 292 Broadway, Paterson.
 McDede, Frank, 908 Main street, Paterson.
 Meloney, L. F., Clifton.
 Michela, Luigi S., 208 Market street, Paterson.
 Millsbaugh, Daniel T., 25 Totowa avenue, Paterson.
 Mitchell, Charles R., 16 Church street, Paterson.
 Morrill, James P., 8 Church street, Paterson.
 Murn, Charles J., 33 Clark street, Paterson.
 Neer, Frank, 95 Bridge street, Paterson.
 Neer, Rush, 95 Bridge street, Paterson.
 Neer, Wm., 245 Broadway, Paterson.
 Newman, Arthur L., 147 Ellison street, Paterson.
 Norval, Wm. A., 419 Main street, Paterson.
 O'Donnell, Jas., 82 Ward street, Paterson.
 O'Grady, Thos. F., 374 Grand street, Paterson.

Oram, Joseph H., 95 Bloomfield avenue, Passaic.
 Parke, Henry, 9 Church street, Paterson.
 Paton, Thos. L., 661 E. Twenty-fourth street, Paterson.
 Pedrick, A. C., 167 Jefferson street, Passaic.
 Peter, Walter, 156 Passaic avenue, Passaic.
 Pike, Horace V., 200 Ellison street, Paterson.
 Putaturo, Nichola, 27 N. Fifth street, Paterson.
 Rauschenbach, Paul E., 108 Broadway, Paterson.
 Reigrod, Charles, 141 Broadway, Paterson.
 Reynolds, H. C., 44 Grove street, Passaic.
 Ricardo, N. C., 57 Passaic avenue, Passaic.
 Riggs, Joseph P., Oak Ridge.
 Ritter, John J., 16 Smith street, Paterson.
 Rock, Stephen, 96 Grand street, Passaic.
 Roemer, Jacob, 82 Fair street, Paterson.
 Rogers, Benj. H., 213 Broadway, Paterson.
 Rogers, Lawrence H., 213 Broadway, Paterson.
 Rosenthal, Leo V., 60 N. Main street, Paterson.
 Rubino, Antonio, 43 Cross street, Paterson.
 Russell, Charles B., 27 Clark street, Paterson.
 Ryan, John N., 136 Jefferson street, Passaic.
 Sabatino, Achille, 98 Prospect street, Paterson.
 Sandt, F. R., 466 Park avenue, Paterson.
 Schiffmann, Samuel, 148 Passaic avenue, Passaic.
 Scribner, Chas. H., 82 Ward street, Paterson.
 Shipper, David W., Wanaque.
 Silberstein, Samuel, 141 Broadway, Paterson.
 Solatinow, Joseph, 269 Madison avenue, Passaic.
 Spickers, Wm., 6 Church street, Paterson.
 Stagg, Frank M., 88 Lexington avenue, Passaic.
 Stemmerman, W. H., Main avenue and Jefferson street, Passaic.
 Stewart, Jas. M., 168 Paterson street, Paterson.
 Stinson, Richard, 158 Broadway, Paterson.
 Sullivan, D. W., Washington Place, Passaic.

Sullivan, Jno., 43 Passaic avenue, Passaic.
 Surmann, Isaac, 89 Bridge street, Paterson.
 Synott, Martin J., Little Falls.
 Tattersall, J., 1042 Main street, Paterson.
 Temple, A. H., 164 Jefferson street, Passaic.
 Terhune, Percy H., 162 Gregory avenue, Passaic.
 Terribury, Geo. W., 146 Broadway, Paterson.
 Todd, Francis H., 83 Auburn street, Paterson.
 Townsend, S. C., 113 Paterson street, Paterson.
 Tresca, Ettore, 29 Park Pl., Passaic.
 Tuers, G. E., 12 Church street, Paterson.
 Utter, Sylvester, 12 Church street, Paterson.
 Van Deins, W. F., Little Falls.
 Vanderbeek, Andrew B., 160 Broadway, Paterson.
 Vander Clock, Cornelius, 179 Jefferson street, Passaic.
 Van Dyne, Dr., Little Falls.
 Van Eess, John, 78 Hamilton avenue, Paterson.
 Van Noort, Frank J., 393 Main street, Paterson.
 Van Riper, A. Ward, Main avenue, Passaic.
 Van Riper, Cornelius, 207 Main avenue, Passaic.
 Van Schott, G. J., 135 Lexington avenue, Passaic.
 Van Schott, Gerard J., 125 Lexington avenue, Passaic.
 Van Vrawken, G., 155 High street, Passaic.
 Varvaro, Ettore, 35 Park Place, Passaic.
 Veenstra, William, 18 Church street, Paterson.
 Vigna, Fortunato, 35 Ward street, Paterson.
 Vreeland, Frank D., 144 Carroll street, Paterson.
 Vreeland, Ralph D., 79 Bloomfield avenue, Passaic.
 Walton, Gordan G., 8 Church street, Paterson.
 Ward, Albert H., 404 Totowa avenue, Paterson.
 Warren, D. Edward, 327 Paulison avenue, Passaic.
 Was, Francis J. T., 75 E. Sixteenth street, Paterson.
 Welsh, Geo. T., Passaic avenue, Passaic.
 Whalen, Wm. J., 141 Ward street, Paterson.
 White, Sarah C. S., 33 Elm street, Passaic.

Wiley, S. F., 17 Church street, Paterson.
 Willard, Harry S., 44 Church street, Paterson.
 Williams, Hiram, 154 Monroe street, Passaic.
 Williams, J. W., 401 Ellison street, Paterson.
 Wolfe, Aaron R., 500 Union avenue, Paterson.
 Yates, John S., 286 Broadway, Paterson.
 Young, W. H., Little Falls.

SALEM COUNTY.

Allen, L. A. D., 69 N. Main street, Woodstown.
 Barnhart, Newton H., Penns Grove.
 Beckett, A. T., Salem.
 Biberback, Francis, Salem.
 Black, M. Stanley, Elmer.
 Campbell, John, Elmer.
 Carpenter, Wm. H., 213½ Broadway, Salem.
 Cheeseman, C. P., Elmer.
 Cheeseman, Henry, 297 E. Broadway, Salem.
 Conover, J. V., Elmer.
 Davis, R. M., 260 E. Broadway, Salem.
 De Grofft, E. E., Woodstown.
 Ewen, Warren D., Alloway.
 Fitch, Geo. W., Darstown.
 Fleming, C. L., Penns Grove.
 Good, Wm. F., Quinton.
 Harris, F. B., Canton.
 Hillard, W. T., Salem.
 Hires, N. S., 69 Market street, Salem.
 Hummel, L. H., Salem.
 Husted, F. B., Quinton.
 Husted, J. M., Woodstown.
 Jackson, Henry, 83 Market street, Salem.
 James, Wm. H., Pennsville.
 Johnson, Harry T., Pedricktown.
 Lummis, C. Percy, Penns Grove.
 McGeorge, Emerson, Woodstown.
 Miller, L. H., Woodstown.
 Patterson, J. A., Salem.
 Sharpe, E. S., Salem.
 Sherron, C. M., Broadway, Salem.
 Smith, Ellen B., Salem.
 Smith, John T., Salem.
 Smith, W. Scott, Salem.
 Simmerbill, Jno., Penns Grove.

Taylor, Sarah, Woodstown.
Thomas, C. W., Woodstown.

Waddington, B. A., 260 E. Broadway,
Salem.
Wiley, David, Salem.
Woodruff, A. B., Elmer.

SOMERSET COUNTY.

Adams, Dan'l C., North Plainfield.
Anderson, J. E., Neshanic.

Beekman, J. B., Pluckamin.
Buchanan, J. Hervey, North Plainfield.

Cooler, J. H., North Plainfield.
Cooper, J. Howard, Middlebush.

Davis, E. C., Bound Brook.
Davis, H. V., North Branch.
Dearborn, R. B., Peapack.
De Bois, F. E., North Plainfield.

Ely, L., Somerville.

Farrow, E. F., Peapack.
Field, Frank L., Liberty Corner.
Fields, R. F., Bedminster.
Fisher, C. R. P., Bound Brook.
Flynn, T. H., Somerville.

Gaston, Mary, Somerville.
Graf, E. R., Somerville.

Halstead, C. F., Somerville.
Hecht, J. P., Somerville.
Henry, George, Somerville.
Hughes, Fred. J., North Plainfield.

Jones, Fred., Basking Ridge.

Kaucher, H. L., Bound Brook.
Kay, C. R., Peapack.

Lanning, L. M., Somerville.
Lawton, A. A., Somerville.
Leahy, Dr., Bound Brook.
Long, W. H., Somerville.

McCanaghy, Francis, Somerville.
McWilliams, J. F., Somerville.
Meigh, Josiah, Bernardsville.
Merrill, Wm. H., Somerville.
Mosher, Abram B., Griggstown.

Nixon, Warford L., Raritan.

Pennington, Dr., Bernardsville.
Pitts, Albert, North Plainfield.

Reed, L. T., Somerville.
Reeve, Marvin, Rocky Hill.
Robinson, J. T., Bound Brook.
Rogers, H., Bound Brook.
Ross, J. Gordon, Basking Ridge.

Schlesinger, Raritan.
Seaman, B. F., Raritan.

Smalley, M. C., Gladstone.
Stillwell, A. L., Somerville.
Sutphin, Fred. C., Bernardsville.

Taylor, S. O. B., Millstone.

Voorhies, A. F., Basking Ridge.

Wild, Fred. E., Bound Brook.

Zeglio, P. J., 48 Somerset street, North
Plainfield.

SUSSEX COUNTY.

Allen, J. M., Sussex.
Andrus, T. H., Sparta.
Ayers, Edward A., Branchville.

Beatty, E. E. B., Newton.
Brooker, John B., Swartswood.
Burd, D. C., Ogdensburg.

Clark, Jephtha C., Andover.
Cole, Martin, Jr., Halesville.
Coleman, Jos. G., Lafayette.
Crane, A. L., Beemerville.

Dowling, C. E., Sparta.
Dunning, Chas. M., Coleville.

Furgeson, Benj. W., Sussex.

Garrison, Frank, Lafayette.

Harp, H. J., Sussex.
Hood, Bruno, Newton.

Jacob, A. N., Sparta.
Jones, Edward W., Layton.

Landes, E. W., Stillwater.

McCloughan, Harvey J., Newton.
McCloughan, J. H., Swartswood.
Miller, J. N., Newton.
Moore, John, Sussex.
Morrison, Ephraim, Newton.

Neldem, C. R., Stanhope.

Pellet, J. B., Hamburg.
Potter, E. B., Newton.
Price, J. Cole, Branchville.

Ranson, Alonzo A., Layton.
Riddell, Dr., Branchville.

Smith, Warren H., Newton.
Strader, John C., Lafayette.
Straley, S. B., Newton.

Uptegrove, E. P., Hamburg.

Van Gaesbeck, H. D., Sussex.
Voorhees, Shepard, Newton.

Wilbur, F. P., Franklin Furnace.
Woolfe, Jos., Colesville.

UNION COUNTY.

Adams, D. C., 46 Grove street, Plain-
field.

Anderson, J. C., 405 W. Fourth street,
Plainfield.

Anthony, W. H., 423 Park avenue,
Plainfield.

Ard, F. C., Plainfield.

Bailey, Frederick R., 1165 E. Jersey
street, Elizabeth.

Bailey, George W., 1165 E. Jersey
street, Elizabeth.

Baker, R. D., 56 De Forest avenue,
Summit.

Bellino, Pasquale, 811 Third avenue,
Elizabeth.

Berg, J. F., Plainfield.

Blair, James A., Kenilworth.

Blair, T. D., 414 Park avenue, Plain-
field.

Boone, W. C., Plainfield.

Boozan, Wm. E., 1029 E. Jersey street,
Elizabeth.

Brennan, A. K., 401 Grant avenue,
Plainfield.

Brown, F. Halstead, Roselle.

Brown, Frank H., 580 Westfield ave-
nue, Elizabeth.

Brown, Stanley R., 287 N. Broad street,
Elizabeth.

Buchanan, J. H., 43 Duer street, Plain-
field.

Buck, Abijah O., 55 Cherry street,
Elizabeth.

Bunting, P. D., 1060 E. Jersey street,
Elizabeth.

Burling, Jno., Summit.

Burnett, Thomas, 253 Court street,
Elizabeth.

Burpeau, Josephine, 1141 E. Jersey
street, Elizabeth.

Carman, J. H., Plainfield.

Cladeck, W. E., Rahway.

Clawson, M. L., Plainfield.

Coles, J. Ackerman, Scotch Plains.

Conover, J. H., 1077 E. Jersey street,
Elizabeth.

Cooler, R. L., 98 Westervelt avenue,
Plainfield.

Cooper, Sherman, Westfield.

Corbusier, 616 Park avenue, Plainfield.

Cornwell, F. W., 192 E. Front street,
Plainfield.

Cregar, P. B., Plainfield.

Crouthers, Anna, 1120 E. Jersey street,
Elizabeth.

Currie, W. W., 515 Madison avenue,
Plainfield.

D'Agosto, Oresto, 633 Third avenue,
Elizabeth.

Davis, Thos. S., Plainfield.

Decker, Chas. T., 180 Elm street,
Westfield.

Deugler, H. P., Springfield.

Desmond, Lawrence P., 142 Court
street, Elizabeth.

Dolan, Thomas E., 250 First avenue,
Elizabeth.

Dubois, F. E., 431 Park avenue, Plain-
field.

Dundon, Arthur H., Plainfield.

Eaton, A. R., 1159 E. Jersey street,
Elizabeth.

Endicott, G. W., 621 Park avenue,
Plainfield.

English, D. E., 305 Springfield avenue,
Summit.

Fischer, Alexander, 512 E. Jersey
street, Elizabeth.

Funk, Joseph, 615 Elizabeth avenue,
Elizabeth.

Gale, Wm., Westfield.

Galloway, Geo. E., Rahway.

Gesswein, C. A., Bristol Bldg., Plain-
field.

Gilpin, F. B., Cranford.

Goldstein, Isadore, 839 Elizabeth ave-
nue, Elizabeth.

Gorton, E., 19 Prospect street, Summit.

Green, James E., 463 N. Broad street,
Elizabeth.

Grier, E. B., 400 Westminster avenue,
Elizabeth.

Hamil, R. H., Summit.

Harrison, Jos. B., Westfield.

Hedges, B. Van D., 703 Watchung ave-
nue, Plainfield.

Hedges, E. W., 703 Watchung avenue,
Plainfield.

Higgins, Thomas F., 961 William street,
Elizabeth.

Holmes, C. B., Rahway.

Hough, H. Page, Rahway.

Hubbard, H. V., 420 Central avenue,
Plainfield.

Hughes, F. J., 49 Somerset street,
Plainfield.

Hurley, J. William, 36 Third street,
Elizabeth.

Irwin, F. C., Cranford.

Keefe, S. J., 1063 E. Jersey street,
Elizabeth.

Keenan, J. H., 319 Union avenue, Eliza-
beth.

Keener, C. B., Springfield avenue,
Summit.

Keeny, Sarah D., Plainfield.

Kelly, George G., 1156 E. Jersey street,
Elizabeth.

Keough, John W., 121 Livingston
street, Elizabeth.

Kepple, Carl R., 564 Madison avenue,
Elizabeth.

Kinch, Fred A., Westfield.

Knauer, George, 14½ Third street,
Elizabeth.

Korngut, Samuel, 167 Second street, Elizabeth.
 Krans, Clara D., 920 Park avenue, Plainfield.
 Krans, E. S., 920 Park avenue, Plainfield.
 Laird, Geo. S., Westfield.
 Lamson, W. J., 120 Summit avenue, Summit.
 Lamy, Anthony W., 132 E. Jersey street, Elizabeth.
 Lawrence, Alfred, 1086 Elizabeth avenue, Elizabeth.
 Lawrence, Wm. H., Summit.
 Lawson, J. T., 308 E. Third street, Plainfield.
 Leary, Joanna, 511 N. Broad street, Elizabeth.
 Livengood, Horace R., 1105 E. Jersey street, Elizabeth.
 Livengood, T. F., 1105 E. Jersey street, Elizabeth.
 Longbothum, 524 Park avenue, Plainfield.
 Lowrie, H. H., 516 Park avenue, Plainfield.
 Lufburrow, C. B., 327 W. Front street, Plainfield.
 MacConnell, C. W., Cranford.
 Mawson, Gertrude, Summit.
 McConnell, Joseph, Cranford.
 McElhinney, Dennis R., 626 Elizabeth avenue, Elizabeth.
 Moister, R. W., 7 Norwood avenue, Summit.
 Montford, Robert, 1031 E. Jersey street, Elizabeth.
 Morris, W. B., Springfield.
 Mravlag, Victor, 1062 E. Jersey street, Elizabeth.
 Munger, R. T., Fanwood.
 Murray, W. H., 737 Watchung avenue, Plainfield.
 Newman, L. G., 318 E. Broad street, Westfield.
 Peck, Geo., 926 N. Broad street, Elizabeth.
 Perkins, J. L., Cranford.
 Pierson, Frederick H., 340 Westminster avenue, Elizabeth.
 Pierson, Henry C., Roselle.
 Pierson, H. Morton, Roselle.
 Pitts, Albert, 178 E. Front street, Plainfield.
 Powell, Grace, 950 Park avenue, Plainfield.
 Pratt, C. H., 111 Putnam avenue, Plainfield.
 Probasco, Norman H., 621 Park avenue, Plainfield.
 Prout, Thomas P., Summit.
 Quinn, Stephen T., 326 S. Broad street, Elizabeth.

Randolph, Jno. M., Rahway.
 Rayne, J. Edward, 655 Elizabeth avenue, Elizabeth.
 Reilly, J. P., 215 Elizabeth avenue, Elizabeth.
 Reiner, Jacob, 1053 Elizabeth avenue, Elizabeth.
 Risk, J. Boyd, Summit.
 Robinson, Moses, 1016 E. Grand street, Elizabeth.
 Rushmore, E., Plainfield.
 Savoye, R. G., Westfield.
 Schlichter, Chas. H., 1024 E. Jersey street, Elizabeth.
 Searles, W. B., Roselle.
 Sell, F. W., Rahway.
 Shangie, Milton A., 1148 E. Jersey street, Elizabeth.
 Sheppard, A. E., 427 W. Front street, Plainfield.
 Sherrers, Russell A., 1158 E. Jersey street, Elizabeth.
 Silvers, Ellhu B., Rahway.
 Sinclair, Robert R., Westfield.
 Smith, T. V., Westfield.
 Smith, Wm. R., Roselle Park.
 Spirito, Francesco, 634 Third avenue, Elizabeth.
 Steele, P. A., 109 Summit avenue, Summit.
 Stein, Emil, 155 Second street, Elizabeth.
 Stern, Arthur, 218 E. Jersey street, Elizabeth.
 Sites, J. A., Springfield.
 Strickland, George W., Roselle.
 Tomlinson, R. D., Plainfield.
 Tomlinson, T. H., 212 E. Seventh street, Plainfield.
 Turner, W. F., 1091 Julia street, Elizabeth.
 Vall, J. L., Cranford.
 Van Horn, A. F., 514 Central avenue, Plainfield.
 Voorhees, Nathaniel W., 297 N. Broad street, Elizabeth.
 Wade, S. Franklin, 1144 E. Broad street, Elizabeth.
 Wagner, Otto, 1071 Elizabeth avenue, Elizabeth.
 Warncke, Frank, 310 First avenue, Elizabeth.
 Westcott, F. W., Fanwood.
 Westervelt, Marion Z., Rahway.
 Whitehead, R. B., 36 Third street, Elizabeth.
 Williams, Jean, 7 Waldron avenue, Summit.
 Wilson, N. L., 410 Westminster avenue, Elizabeth.
 Wooley, J. Stanley, Truell Court, Plainfield.
 Wright, Jos. E., Westfield.

Yood, R., 117 W. Second street, Plainfield.
 Young, J. S., Rahway.
 Younglove, John, 407 Jefferson street, Elizabeth.
 Zeglio, P. J., 48 Somerset street, Plainfield.

WARREN COUNTY.

Albertson, W. C., Belvidere.
 Albright, Wm. H., Alpha.
 Allen, Gertrude, Hackettstown.
 Allen, Wm. C., Blairstown.
 Anderson, Dr., Columbia.
 Barber, Isaac, Phillipsburg.
 Barber, Thomas, Phillipsburg.
 Beasley, Nellie E., Belvidere.
 Bergin, E. J., Washington.
 Blackburn, Geo., Blairstown.
 Borts, Isaac, Alpha.
 Bossard, H. B., Phillipsburg.
 Boyer, C. H., Riegelsville.
 Brasefield, Edgar N., Phillipsburg.
 Burd, Wm. H., Belvidere.
 Carhart, Harry L., Blairstown.
 Cline, C. H., Hackettstown.
 Creveling, Chas. F., Phillipsburg.
 Creveling, Philip G., 94 S. Main street, Phillipsburg.
 Crispin, Dr., 92 S. Main street, Phillipsburg.
 Cummings, G. Wyckoff, Belvidere.
 Curtis, Frank W., Stewartsville.
 Dedrick, Thomas S., Washington.
 Drake, Francis J., Phillipsburg.
 Founk, Harry S., Port Murray.
 Gordon, F. S., Blairstown.
 Griffith, J. H., Phillipsburg.
 Haggerty, F. W., Vienna.
 Haggerty, L., Danville.

Hann, Laura, Washington.
 Hoagland, L. B., Oxford.
 Johnson, Harry W., Riegelsville.
 Kitchen, G. H., Washington.
 Kline, Wm., Phillipsburg.
 La Rien, T. J., 107 E. Washington avenue, Washington.
 Leferts, F. P., Belvidere.
 Lorne, F. J., Washington.
 Martin, A. E., Hackettstown.
 McKinstry, F. P., Washington.
 Miller, C. K., Hackettstown.
 Miller, Jno., Hope.
 Millicek, Howard C., Oxford.
 Moore, Edward H., Asbury.
 Osmun, L. C., Hackettstown.
 Pursell, W. D., 508 S. Main street, Phillipsburg.
 Reese, J. M., Phillipsburg.
 Ricardo, J. Nelson, 373 Warren street, Phillipsburg.
 Rohn, John P., Blairstown.
 Rorback, F., Johnsonburg.
 Shimer, F. A., 88 Hudson street, Phillipsburg.
 Smith, C. B., Washington.
 Stewart, R. A., Phillipsburg.
 Storm, Walter, Hope.
 Swartsweller, Peter E., Belvidere.
 Tunison, G. O., Oxford.
 Van Syckel, Dr., Hackettstown.
 Warrington, Dr., Columbia.
 West, H. R., Phillipsburg.
 Williams, Chas. Morgan, Washington.
 Williston, 609 S. Main street, Phillipsburg.
 Wolf, F. A., 438 S. Main street, Phillipsburg.
 Woodruff, P. H., Hackettstown.
 Young, G. C., Washington.

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